



COMMUNICATIONS INC.

SERVICE MANUAL

UHF-FM MOBILE TRANSCEIVERS

MODELS MCU 15,15H; MCU 31,31H
MCU 18,18H; MCU 34,34H

SERVICE INFORMATION FOR MCU 15 AND MCU 30

1. Test Procedure
2. Main Board 1700-7404-200 Radio Schematic
3. Main Board 1700-7404-200 Parts Overlay
4. Main Board 1700-7404-200 Parts Placement
5. Main Board 1700-7404-200 Option Tie Points
6. Main Board 1700-7404-200 Parts List
7. Main Board 704-064 Radio Schematic
8. Main Board 704-064 Parts Overlay
9. Main Board 704-064 Parts Placement
10. Main Board 704-064 Option Tie Points
11. Main Board 704-064 Parts List
12. Control Board Parts Overlay
13. Control Board Parts List
14. MCU 30 PA Schematic
15. MCU 30 PA Parts Overlay
16. MCU 30 PA Parts Placement
17. MCU 30 PA Parts List
18. MCU 15 PA Schematic
19. MCU 15 PA Parts Overlay
20. MCU 15 PA Parts Placement
21. MCU 15 PA Parts List


1. Test Procedure
2. Main Board 1700-7400-700 Radio Schematic
3. Main Board 1700-7400-700 Parts Overlay
4. Main Board 1700-7400-700 Parts Placement
5. Main Board 1700-7400-700 Outline The Points
6. Main Board 1700-7400-700 Parts List
7. Main Board 700-000 Radio Schematic
8. Main Board 700-000 Parts Overlay
9. Main Board 700-000 Parts Placement
10. Main Board 700-000 Outline The Points
11. Main Board 700-000 Parts List
12. Control Board Parts Overlay
13. Control Board Parts List
14. NEW 10 PA Schematic
15. NEW 10 PA Parts Overlay
16. NEW 10 PA Parts Placement
17. NEW 10 PA Parts List
18. NEW 10 PA Schematic
19. NEW 10 PA Parts Overlay
20. NEW 10 PA Parts Placement
21. NEW 10 PA Parts List

REV. 1	APPLICATION		REVISIONS			
	NEXT ASSY	USED ON	REV	DESCRIPTION	DATE	APPROVED
		MCU-30	A	R-050	9-13-78	BOA
SH 1			B	ENAB-080	3-4-80	Day

TEST PROCEDURE: MCU-30 TRANSMITTER TUNING (DOUBLE TUNED)
MAIN BOARD - 1700-64Q4-200 ONLY

The broadband tuning procedure is required only if the difference between the highest frequency and the lowest frequency exceeds 1.5MHz. After the transmitter has been center tuned per TP 14-154 the following steps are performed to broadband the transmitter. The equipment set-up is identical to that of Fig 1 TP14-154.

1. Monitor M1 with VTVM(2) on +1.5 VDC scale.
2. Set the frequency selector to the channel with the lowest frequency. Note voltage reading on VTVM.
3. Set the frequency selector to the channel with the highest frequency. Note VTVM reading.
4. Tune L304 and L305 such that the voltage reading at M1 is as low as possible for both the highest frequency and the lowest frequency. The voltage should be less than .5VDC.
5. Monitor M2. Repeat steps 2 and 3. Tune L307 and L308 for minimum positive voltage such that the M2 voltage is the same at the highest frequency and at the lowest frequency. Voltage should be less than .2VDC.
6. Monitor M3. Repeat steps 2 and 3. If necessary, tune L310, L311 and L312 for minimum voltage at both the highest frequency and the lowest frequency. Voltage should be less than .2VDC.
7. Monitor M4. Repeat steps 2 and 3. If necessary tune L314 and L315 for maximum negative voltage at both the highest frequency and the lowest frequency. Voltage should be less than -.3VDC.
8. Monitor M5. Repeat steps 2 and 3. If necessary, tune C346, C349, C351 and C355 for maximum negative voltage at both the highest frequency and the lowest frequency. Voltage should be less than -.7VDC.
9. If necessary tune C358 for maximum power output on wattmeter (8).
10. For transmitter power output performance degradation refer to 304-115.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE FRACT. DEC ANG. ± .XX± ± ± .XXX± ±	APPROVALS	DATE	 COMMUNICATIONS INC. SATELLITE BEACH, FLORIDA 32937
	DRAWN GM	9-13-78	
	CHECKED		
	DFTG. SUPV.		
MATERIAL	ENGR. Day	9-13	TEST PROCEDURE: MCU-30 Transmitter Tuning (double tuned)
			APPLIES TO MAIN BOARD 1700-7404-200 ONLY
FINISH			SIZE A PART NUMBER TP 14-155 REV. B
DO NOT SCALE DRWG.		SCALE	SHEET 1 OF 1

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	REV	DESCRIPTION	DATE	APPROVED
		A	R-221	2-1-80	Saf

TEST PROCEDURE: MCU-30 TRANSMITTER TUNING (DOUBLE TUNED)

The broadband tuning procedure is required only if the difference between the highest frequency and the lowest frequency exceeds 1.5 MHz. After the transmitter has been center tuned per TP-14-154 the following steps are performed to broadband the transmitter. The equipment set-up is identical to that of Fig. 1, TP-14-154. All metering voltages are referenced to 13.6 VDC.

1. Monitor M2 with VTVM(2) on -10 VDC scale.
2. Set the frequency selector to the channel with the lowest frequency. Note voltage reading on VTVM.
3. Set the frequency selector to the channel with the highest frequency. Note VTVM reading.
4. Tune L305 and L307 such that the voltage reading at M2 is the same at both the highest frequency and the lowest frequency.
5. Monitor M3. Repeat steps 2 and 3. Tune L310, L311 and L312 for maximum negative voltage at both the highest frequency and the lowest frequency. Voltage should be at least -3.0 VDC.
6. Monitor M4. Repeat steps 2 and 3. Tune L316 for maximum negative voltage at both the highest frequency and the lowest frequency. Voltage should be about -1.0 VDC.
7. Monitor RF output on wattmeter. Repeat steps 2 and 3. Tune L317 and C348 for maximum power out at both the highest frequency and the lowest frequency.
8. For transmitter power output performance degradation refer to 304-115.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE FRACT. DEC ANG. ± .XX± ± .xxx±	APPROVALS	DATE	 COMMUNICATIONS INC. SATELLITE BEACH, FLORIDA 32937
	DRAWN	am	
	CHECKED		
	DFTG. SUPV.		
SERIAL	ENGR. Saf	2-1-80	TEST PROCEDURE: MCU-30 TRANSMITTER TUNING (DOUBLE TUNED) APPLIES TO MAIN BD. 704-064 ONLY
FINISH			SIZE A PART NUMBER TP-14-272 REV. A
DO NOT SCALE DRWG.		SCALE	SHEET 1 OF 1

APPLICATION

NEXT ASSY

USED ON

REVISIONS

REV	DESCRIPTION	DATE	APPROVED
A	R-050	9-15-78	Dag
B	ENAA 553	12-6-78	Dag
C	ENAA 979	2-1-80	Dag

FINAL TEST PROCEDURE - MICRO-COM U30 SERIES
AND

MICRO-COM U15 SERIES

I. TEST SET-UP

A. Equipment

1. MICRO-COM U30 Transceiver
2. HP 410 DC VTVM
3. DC Power Supply with Ammeter 13.6 VDC 15 Amps DC
4. VOM Simpson 360 (Digital)
5. AC VTVM
6. Audio Oscillator
7. Mic Matching Network
8. 450 MHz Thruline Wattmeter, 30dB Power Pad and 50W Element
9. Spectrum Analyzer
10. Deviation Meter*
11. Frequency Counter*
12. Small Blade Tuning Tool and Hex Tuning Tool
13. Tune-Up Crystal
14. Band Reject Filter
15. PTT Switch

*Can be replaced with Cushman or similar equipment.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ARE

FRACT. DEC ANG.
± .XX± ±
.XXX±

MATERIAL

FINISH

DO NOT SCALE DRWG.

APPROVALS

DATE

DRAWN

Gm

12/8/79

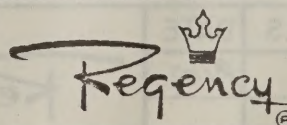
CHECKED

DFTG. SUPV.

ENGR.

Dag

2-1-80

 Regency®

COMMUNICATIONS INC.

SATELLITE BEACH, FLORIDA 32937

TEST PROCEDURE MICRO-COM U30

SIZE

A

PART NUMBER

TP-14-154

REV.

C

SCALE

SHEET 1 OF 12

B. Test Interconnection Diagram

Transmitter Tests

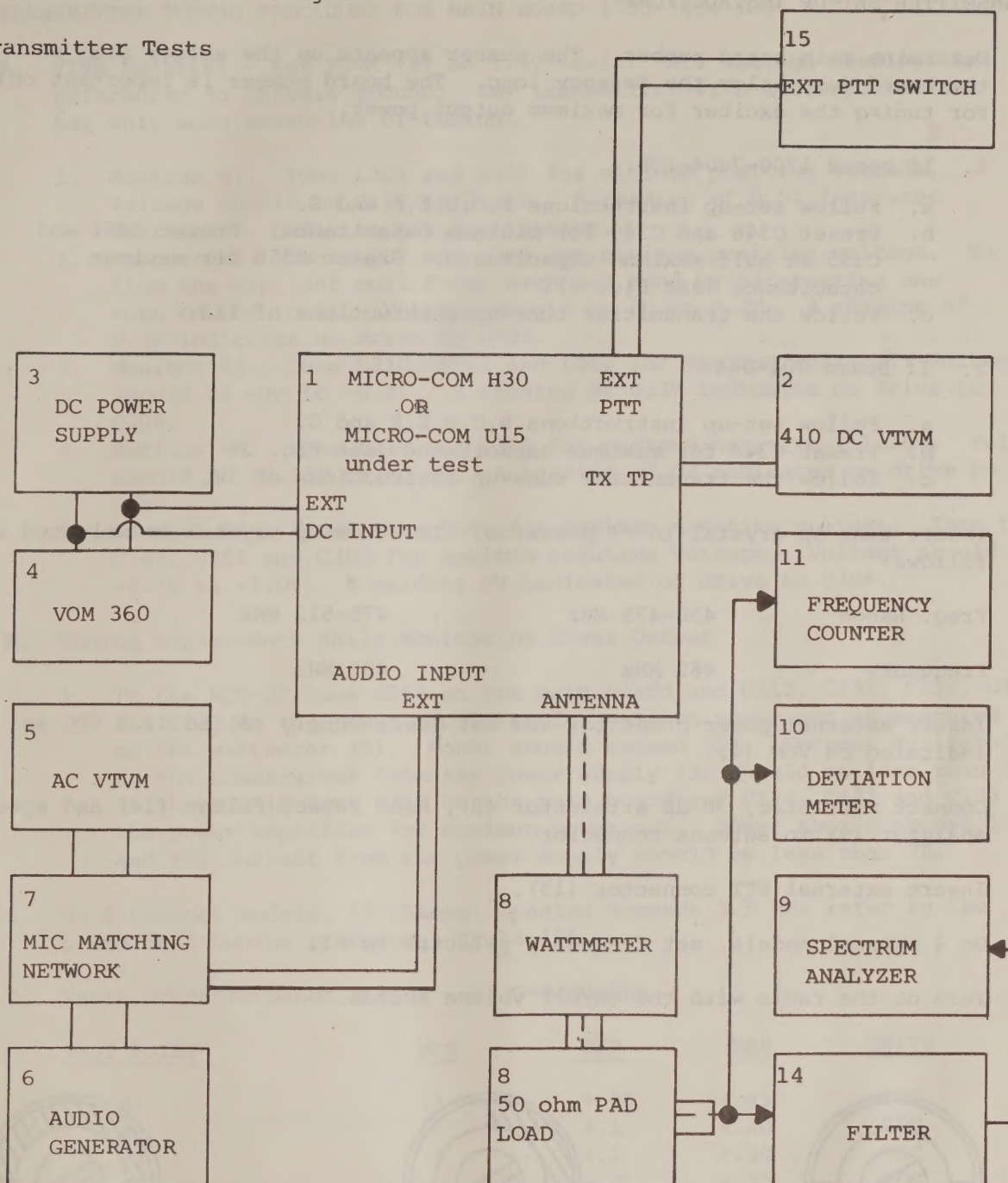


FIGURE 1

DRAWN MF/WJM

DATE 9-1-78

SIZE

PART NUMBER

REV.

APPROVED *bad*

DATE 9-13-78

A

TP-14-154

C

DO NOT SCALE DWG.

SCALE

SHEET 2

II. TRANSMITTER SET-UP INSTRUCTIONS

A. Determine main board number. The number appears on the solder side of the board just below the Regency logo. The board number is important only for tuning the exciter for maximum output power.

1. If board 1700-7404-200:

- Follow set-up instructions B,C,D,E,F and G.
- Preset C346 and C349 for minimum capacitance. Preset C351 and C355 at half maximum capacitance. Preset C358 for maximum capacitance (see Fig. 2).
- Follow the transmitter tune-up instructions of III.

2. If board 704-064:

- Follow set-up instructions B,C,D,E,F and G.
- Preset C348 for maximum capacitance (see Fig. 2)
- Follow the transmitter tune-up instructions of IV.

B. Insert tune-up crystal in F1 position. The tune-up crystal is selected as follows:

Freq. Range	450-475 MHz	475-512 MHz
Frequency	462 MHz	492 MHz

C. Insert external power connector and set power supply (3) to 13.6 VDC as indicated on VOM (4).

D. Connect wattmeter, 30 dB attenuator (8), band reject filter (14) and spectrum analyzer (9) to antenna connector.

E. Insert external PTT connector (15).

F. On 4 channel models, set frequency selector to F1.

G. Turn on the radio with the ON/OFF volume switch.

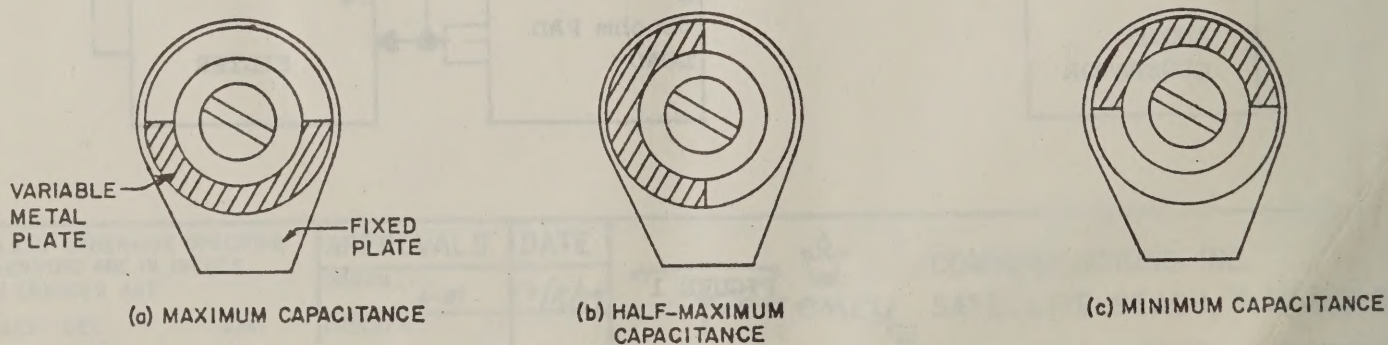


FIGURE 2

DRAWN	DATE	SIZE	PART NUMBER	REV.
APPROVED	DATE 2-1-80	A	TP-14-154	C
DO NOT SCALE DWG.		SCALE	SHEET 3	

III. TRANSMITTER TUNING PROCEDURE FOR MAIN BOARD 1700-7404-200

A. VTVM Metering - Set VTVM (2) on 1.5V scale. All voltage readings are referenced to chassis ground. Key transmitter with external PTT and key only when measuring or tuning.

1. Monitor M1. Tune L304 and L305 for minimum positive voltage. Voltage should be 0.1V to 0.45V. A reading of 0.5V indicates oscillator, Q301, is not oscillating.
2. Monitor M2. Tune L307 and L308 for minimum positive voltage. To find the dip, set coil forms even and tune by alternating one turn on each coil. Voltage should be 0V to 0.2V. A reading of 0.3V indicates no drive to Q303.
3. Monitor M3. Tune L310, L311 and L312 for minimum voltage. Voltage should be +0V to -0.2V. A reading of 0.3V indicates no drive to Q304.
4. Monitor M4. Tune L314 and L315 for maximum negative voltage. Voltage should be -0.35V to -0.5V. A reading of 0V indicates no drive to Q305.
5. Monitor M5. First tune C346 for maximum negative voltage. Then tune C349, C351 and C355 for maximum negative voltage. Voltage should be -0.7V to -1.0V. A reading 0V indicates no drive to Q306.

B. Tuning Adjustments While Monitoring Power Output

1. In the MCU-30 tune C358 on the main board and C112, C131, C132, C121 and C133 on the power amplifier for maximum power out as measured on the wattmeter (8). Power should exceed 35W. Current delivered to the transceiver from the power supply (3) should be less than 13A.
2. In the MCU-15 tune C358 on the main board and C112, C131 and C133 on the power amplifier for maximum power out. Power should exceed 15W and the current from the power supply should be less than 7A.

C. On 4 channel models, if channel spacing exceeds 1.5 MHz refer to the broad band tuning procedure, TP-14-155.

D. Table of Performance Limits - 1700-7404-200

TEST POINT	MIN	TYP	MAX	UNITS
M1	.1	+.30	+.45	VDC
M2	0	+.1	+.20	VDC
M3	0	+.1	+.20	VDC
M4	-.6	-.4	-.35	VDC
M5		-.8	-.7	VDC

E. Continue with the common transmitter set-up instructions of Section V and the receiver alignment instructions.

DRAWN	DATE	SIZE	PART NUMBER	REV.
APPROVED	DATE 2-1-80	A	TP-14-154	C
DO NOT SCALE DWG.	SCALE			SHEET 4

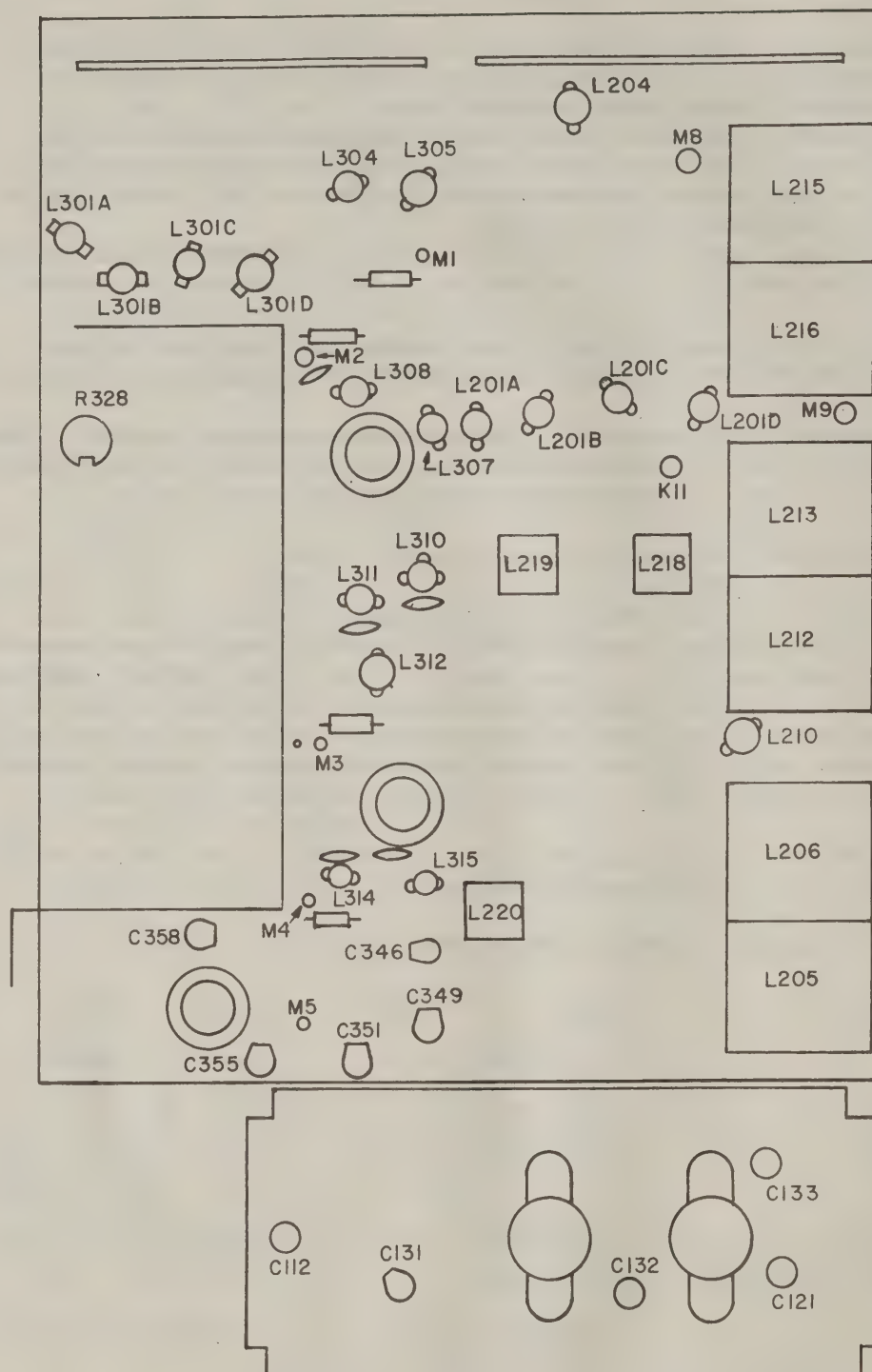


FIGURE 2. TRANSMITTER, RECEIVER AND POWER AMPLIFIER TUNING POINTS

1700-7404-200

IV. TRANSMITTER TUNING PROCEDURE FOR MAIN BOARD - 704-064

A. VTVM Metering - Metering point M1 must be referenced to ground, but metering points M2 through M4 may be referenced to ground or to 13.6V. Key transmitter with external PTT and key only when measuring or tuning.

1. Monitor M1. Tune L304 and L305 for minimum positive voltage. A reading of 2.1V indicates oscillator, Q301, is not oscillating.

The following metering points will be described referenced to 13.6 VDC. The VTVM is set in the -DCV position and all test points are peaked. To reference to ground, set the VTVM in the -DCV position and dip all test points. Either way the voltage difference between tuned and not tuned will be identical.

2. Monitor M2. Alternately tune L305 and L307 for maximum negative voltage. Tune L310 for a minimum. Voltage should be -2.5V to -3.0V. A reading of 0V indicates Q303 stage has no output.
3. Monitor M3. First tune L312 for maximum negative voltage, then tune L311. Tune L316 for a minimum. Voltage should read -3.5V to -5.0V when tuned. A reading of 0V indicates Q304 stage has no output.
4. Monitor M4. Tune L316 for maximum negative voltage, then tune L317 for maximum negative voltage. Voltage should read -2.5 VDC. A reading of 0V indicates Q305 stage has no output. Tune C348 for minimum negative voltage at M4. Voltage dip should be to -1.5 VDC.

B. Tuning Adjustments While Monitoring Power Output

1. In the MCU-30 tune C112, C131, C132, C121 and C133 on the power amplifier for maximum power out as measured on the wattmeter (8). Power should exceed 35W. Current delivered to the transceiver from the power supply (3) should be less than 13A.
2. In the MCU-15 tune C112, C131 and C133 on the power amplifier for maximum power out. Power should exceed 15W and the current from the power supply should be less than 7A.
3. On both MCU-15 and MCU-30 adjust L316, L317 and C348 for maximum power out.

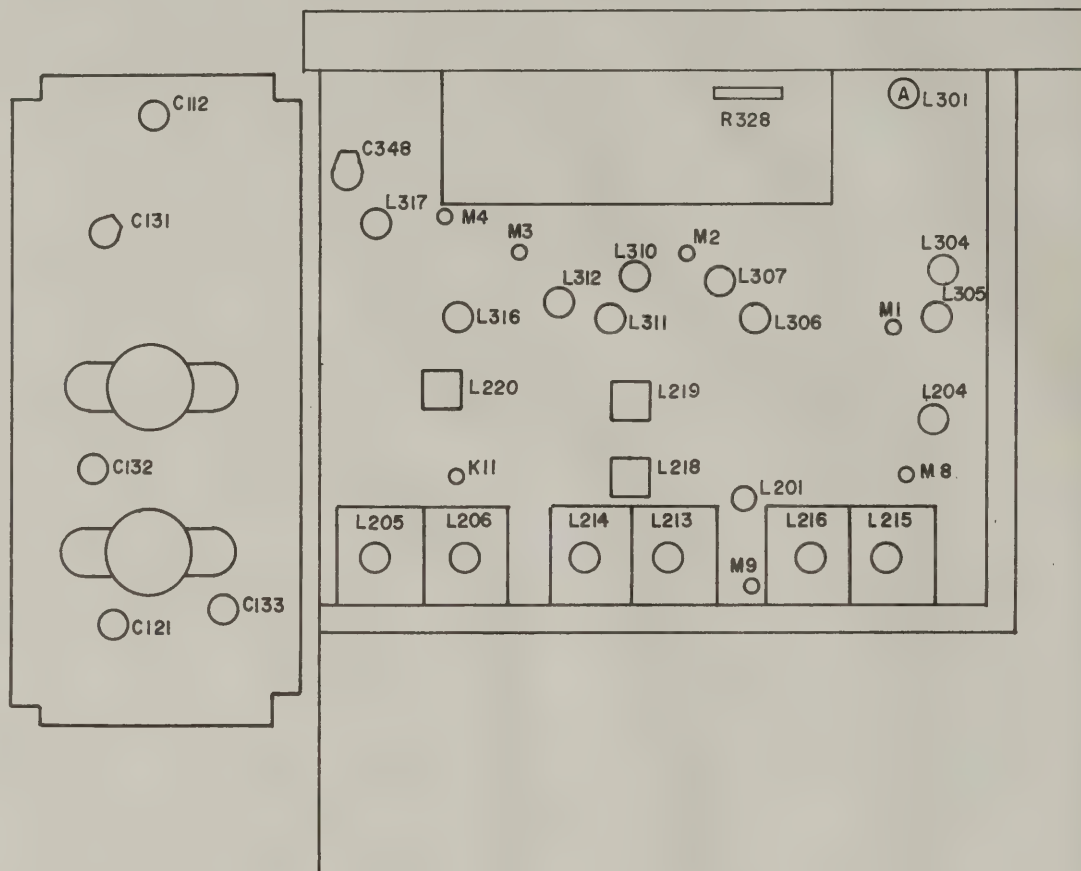
C. On 4 channel models, if channel spacing exceeds 1.5 MHz refer to the broad band tuning procedure, TP-14-272.

D. Table of Performance Limits 1700-7406-400

TEST POINT	MIN	TYP	MAX	UNITS
M1	+2.0	+1.8	+1.6	VDC
M2	-2.0	-2.5	-3.5	VDC
M3	-3.0	-3.5	-5	VDC
M4	-1.0	-1.5	-2	VDC

E. Continue with the common transmitter set-up instructions of Section V and the receiver alignment instructions.

DRAWN	DATE	SIZE	PART NUMBER	REV.
APPROVED <i>Sag</i>	DATE 2-1-80	A	TP-14-154	C
DO NOT SCALE DWG.	SCALE			SHEET 6



NOTES

1. REFER TO PARTS PLACEMENT DWG FOR TUNING POINT LOCATIONS.
2. REF. P.C. BOARD 704-064.

FIGURE 3 - TRANSMITTER, RECEIVER AND POWER AMPLIFIER TUNING POINTS

704-064

DRAWN <i>CM=C</i>	DATE <i>12-79</i>	SIZE <i>A</i>	PART NUMBER	REV.
APPROVED <i>Saf</i>	DATE <i>2-1-80</i>		TP-14-154	C
DO NOT SCALE DWG.		SCALE <i>—</i>		SHEET 7

V. COMMON TRANSMITTER SET-UP INSTRUCTIONS

- A. Connect counter (11) to the output of the 30dB attenuator (8) and set the F1 warp control, L301A, to the nominal crystal frequency ± 100 Hz.
- B. Conducted spurious emissions measurement. Tune band reject filter (14) so that the carrier is not notched and set the spectrum analyzer (9) carrier indication to the 0dB reference line. Tune the band reject filter to attenuate the carrier at least 30dB. In the MCU-30 all harmonics should be 59dB or more lower than the reference, in the MCU-15 56dB.
- C. Deviation adjustment
 1. Connect audio generator (6) to microphone input. Set the generator for 1 KHz at 1 VAC. Connect the deviation meter (10) to the attenuator (9) output.
 2. Key the transmitter and adjust R328 for ± 5 KHz deviation as measured on the meter.
- D. Check the modulation sensitivity by reducing the audio generator output until the deviation is ± 3 KHz. The measured generator output on the AC VTVM (5) should be less than 20mv rms.
- E. On 4 channel models reconnect the counter (11) to attenuator (8). Insert the crystal in each channel. All channels must be capable of being warped on frequency ± 100 Hz. Repeat C.1 and monitor deviation meter (10) on each channel. Deviation should be ± 4.5 KHz, ± 500 Hz.
- F. Crystal heater circuit check. At room temperature (25°C or 72°F) the voltage at the collector of Q307 should be no lower than 13.0V. When RT301 is cooled below 0°C (32°F) and when DC power is initially applied to the transceiver the collector should drop to a maximum voltage of 7 VDC as measured on VTVM (2).

G. Table of Common Transmitter Performance Limits

PARAMETER	MIN	TYP	MAX	UNITS
Deviation	-	-	± 5.0	KHz
Mic Mod Sens	-	10	20	mVAC
Collector Q307 at 0°C	-	2.5	7.0	VDC
MCU-30				
Tx Power Output	35	40	50	W
DC Current	8	10	13	A
MCU-15				
Tx Power Output	15	20	25	W
DC Current	3.5	5	7	A

DRAWN

DATE

SIZE

PART NUMBER

REV.

APPROVED

DATE 2-1-80

A

TP-14-154

C

DO NOT SCALE DWG.

SCALE

SHEET 8

RECEIVER ALIGNMENT

I. TEST+SET UP

A. Equipment

1. MICRO-COM U30 Transceiver
2. UHF-FM Signal Generator*
3. AC VTVM
4. DC Power Supply
5. DC VTVM or VOM
6. VOM - Simpson 360 (Digital)
7. Hex Tuning Tool
8. Small Blade Screwdriver
9. Small Blade Tuning Tool
10. 10.7 MHz Oscillator
11. Frequency Counter*
12. Sub-Audible Tone Generator
13. Tune-Up Crystal
14. Audio Oscilloscope
15. 3.2 ohm Speaker Load
16. Sinadder or Distortion Meter with 1000 Hz Band Elimination Filter

*Can be replaced with Cushman or similar equipment

DRAWN	DATE	SIZE	PART NUMBER	REV.
APPROVED <i>Dag</i>	DATE 2-1-80	A	TP-14-154	C
DO NOT SCALE DWG.		SCALE	SHEET 9	

B. Test Interconnection Diagram

Receiver Alignment

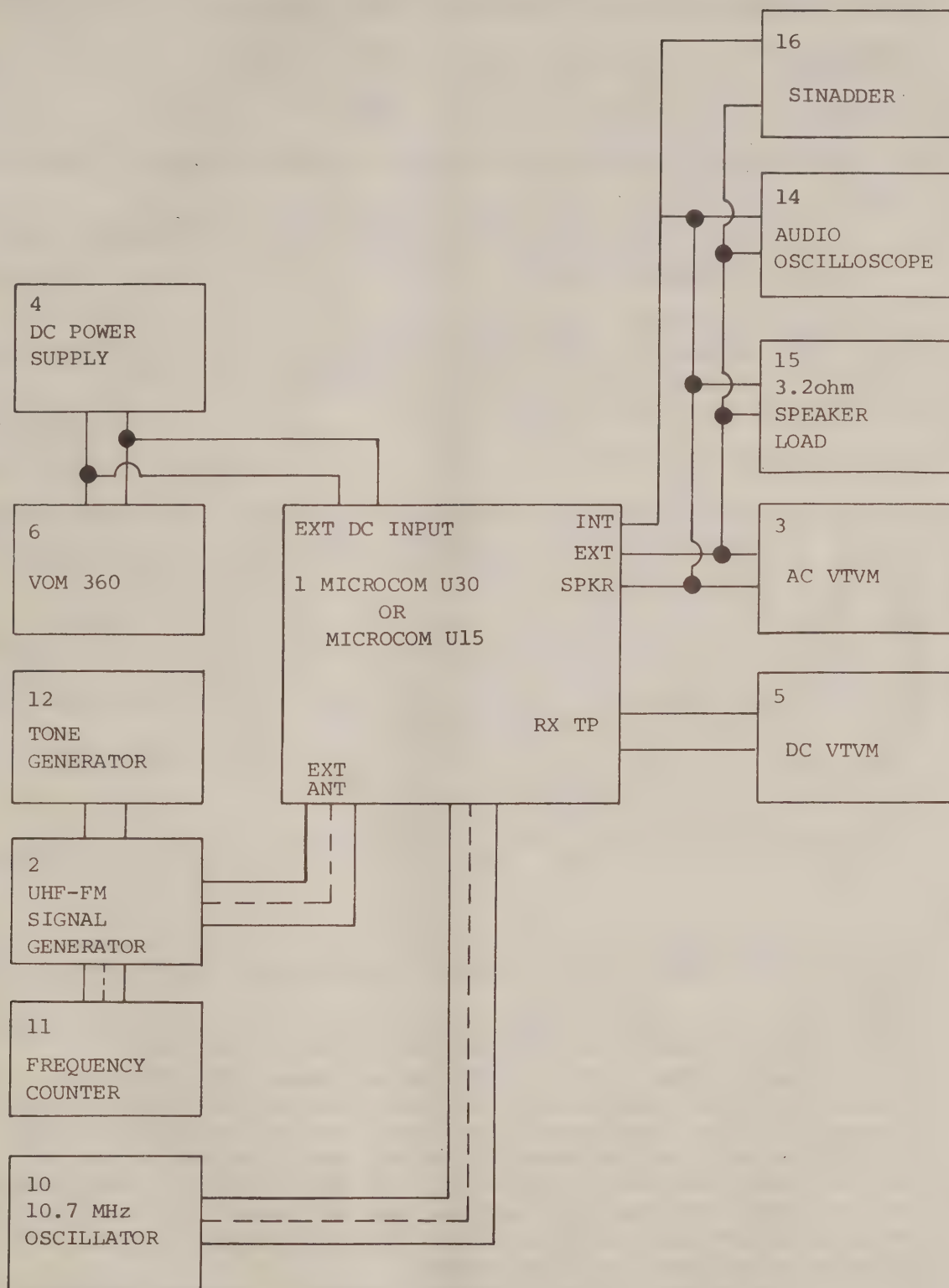


FIGURE 4

DRAWN MF/WJM	DATE 9-1-78	SIZE A	PART NUMBER TP-14-154	REV. C
APPROVED [Signature]	DATE 9-13-79	SCALE -		SHEET 10
DO NOT SCALE DWG.				

REV. C
SH. 11
TP-14-154
DWG. NO.

II. TEST SET-UP INSTRUCTIONS

- A. Set DC voltage to 13.8 VDC as measured on VOM(6).
- B. Insert tune-up crystal in F1 position. The crystal is selected as follows:

Freq Range	450-476 MHz	470-512 MHz
Frequency	462 MHz	492 MHz

- C. Set UHF-FM signal generator(2) to tune-up crystal frequency as measured on frequency counter(9).
- D.
 - 1. Set squelch control (R402) fully clockwise.
 - 2. On tone units, set tone monitor switch to monitor position or unground microphone hangup button.
- E. In 4 channel units set channel selector to F1.
- F. Preset L210 as follows: above 465 MHz, screw the slug all the way into the coil; below 465 MHz screw the slug out to the top of the coil.
- G. Turn on radio with ON/OFF Volume Switch.

III. RECEIVER ALIGNMENT PROCEDURE

- A. Connect AC VTVM(3) across the speaker load and adjust the ON-OFF Volume Control for a readable VTVM(3) reading on the 1 VAC scale.
- B. Monitor K11 with DC VTVM(5). Inject strong 10.700 MHz signal into the vicinity of L319 and Q207. Set K11 to 3.5 VDC by adjusting L220.
- C. Monitor M8 with the DC VTVM(5). Adjust L204 for minimum voltage at M8. A voltage dip of 0.05V from the oscillator off to the oscillator on should be observed. A reading of 0.6 VDC indicates no drive to Q205.
- D. Modulate signal generator(2) with a 1 KHz tone at +3 KHz deviation. Increase generator output for 6dB SINAD on sinadder(16).
- E. Adjust L205, L206, L212 and L213 for best 12 dB SINAD by constantly reducing the signal generator(2) output for 12 dB SINAD.
- F. Adjust L215 and L216 for best 12 dB SINAD.
- G. Monitor K11 with DC VTVM. Adjust L201A to 3.5V.
- H. Increase deviation to +6 KHz. Adjust L218 and L219 for best 12 dB SINAD.
- J. Set the signal generator(2) for a 1 KHz tone at +3 KHz deviation. Adjust the generator output for 12 dB SINAD. The generator should read no more than .35 uv.
- K. Increase the signal generator(2) output to 100 uv and turn the volume control, R403, to full volume. The AC VTVM(3) should exceed 4.0 VAC.
- L. Set the signal generator(2) to -130 dBm and remove the modulation. Set AC VTVM(3) to the 1V scale and use the volume control to set voltage to 1.0 VAC. Increase the signal generator output until the AC VTVM reads 0.1 VAC. This is 20 dB quieting and the generator should read less than 0.5uv.
- M. Set the signal generator(2) output to -130 dBm. Set the squelch control, R402, to threshold, just quieting the receiver noise. Increase the signal generator output until noise appears. This is threshold squelch and the generator should read less then .25uv.
- N. Turn the squelch control fully counterclockwise. Increase the signal generator output until the squelch opens. This is tight squelch and the generator should read less than 0.7uv.

DRAWN <i>mt</i>	DATE <i>9-1-78</i>	SIZE A	PART NUMBER TP-14-154	REV. C
APPROVED <i>Dag</i>	DATE <i>9-13-78</i>			
DO NOT SCALE DWG.		SCALE <i>—</i>		SHEET <i>11</i>

III. RECEIVER ALIGNMENT PROCEDURE (cont.)

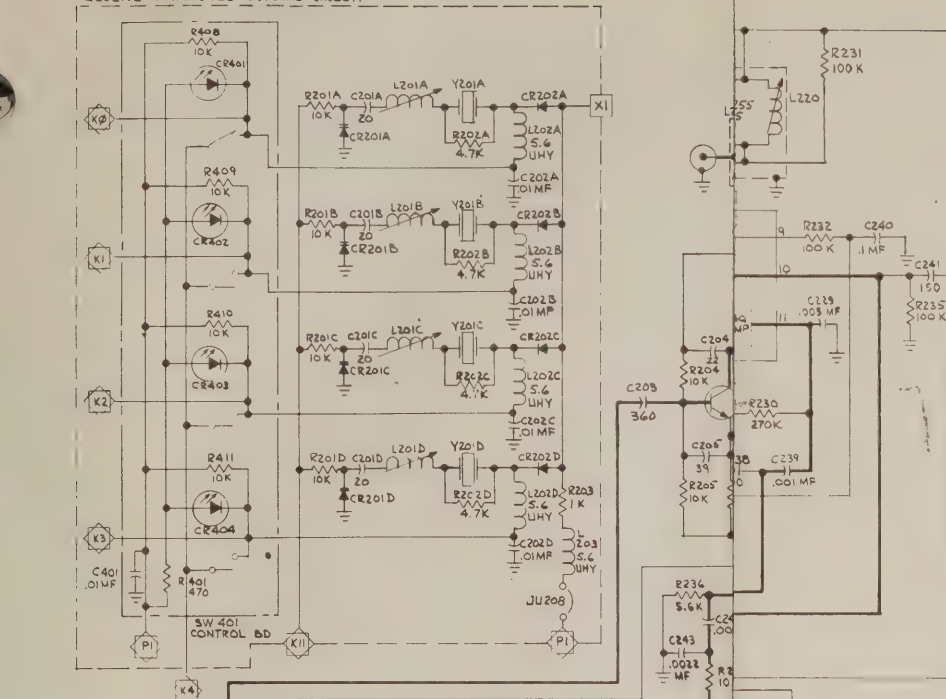
- O. Monitor K11 with DC VTVM(5) set on 10V scale. Set signal generator(2) for 100uv and offset the frequency +3.0 KHz from the crystal frequency. Voltage at K11 should increase from 3.5 VDC on frequency to at least 4.5 VDC with +3.0 KHz offset.
- P. On 4 channel models, the tuning should be done on a center frequency. It may be necessary to adjust L205, L206, L212, L213, L215 and L216 for best sensitivity on the highest frequency and the lowest frequency. If frequency spacing exceeds 1.5 MHz refer to 304-116 for sensitivity degradation. To net F2, F3 and F4 repeat steps G and J adjusting L201B, L201C and L201D.

IV. TABLE OF PERFORMANCE LIMITS

PARAMETER	MIN	TYP	MAX	UNITS
M8	-	.5	.55	VDC
12 dB SINAD	-	.3	.35	uv
20 dBQ	-	.4	.5	uv
Threshold Squelch	-	.2	.25	uv
Tight Squelch	-	.55	.7	uv
Audio Output 1 KHz Tone				
3 KHz Dev	4.0	4.2	-	VAC
Noise Output	4.0	4.2	-	VAC
K11 +3 KHz offset	4.5	6.0	-	VDC

DRAWN <i>ms</i>	DATE <i>9-1-78</i>	SIZE A	PART NUMBER TP-14-154	REV. C
APPROVED <i>ddj</i>	DATE <i>9-13-78</i>	SCALE <i>-</i>	SHEET 12	
DO NOT SCALE DWG.				

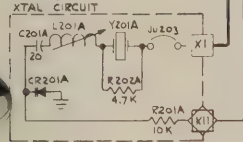
RECEIVE 4 CHANNEL CRYSTAL CIRCUIT



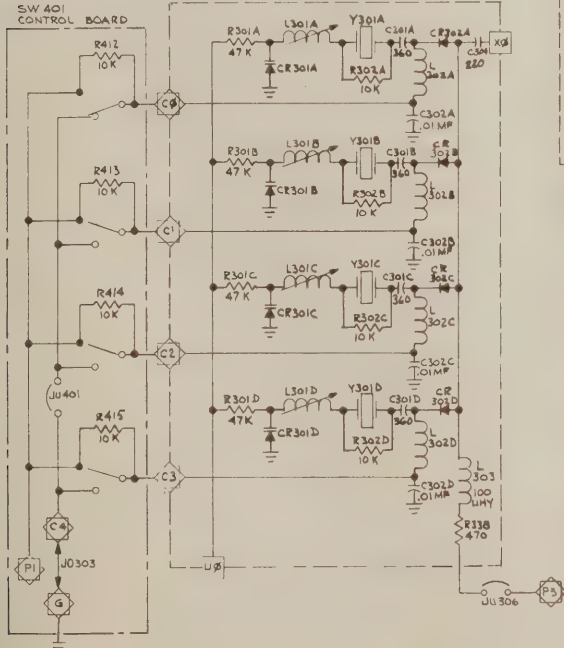
NOTES

1. ALL CAPACITOR VALUES NOT SPECIFIED OTHERWISE ARE PICO-FARAD.
ALL RESISTOR VALUES NOT SPECIFIED OTHERWISE ARE OHMS, 1/4 W.
2. DENOTES PIN LOCATED ON PC BOARD
 DENOTES CIRCUIT TIE POINT.
 DENOTES SOLDERED IN JUMPERS.
 DENOTES HARDWIRED JUMPERS - USER SELECTED
 DENOTES PLUGGED IN JUMPERS (OPTIONS)
--- DENOTES BOARD BOUNDARIES
--- DENOTES OPTION VARIATIONS
* DENOTES PARTS VARIABLE WITH MODEL

RCVR 1 CHAN. XTAL. CIRCUIT



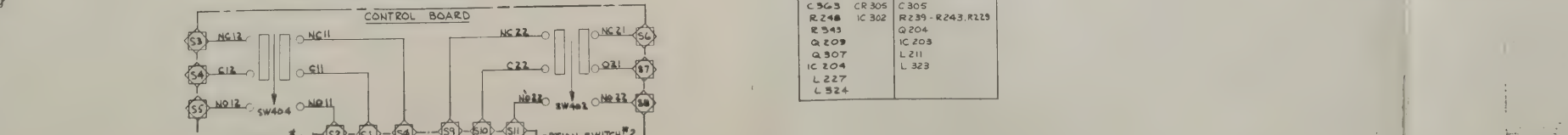
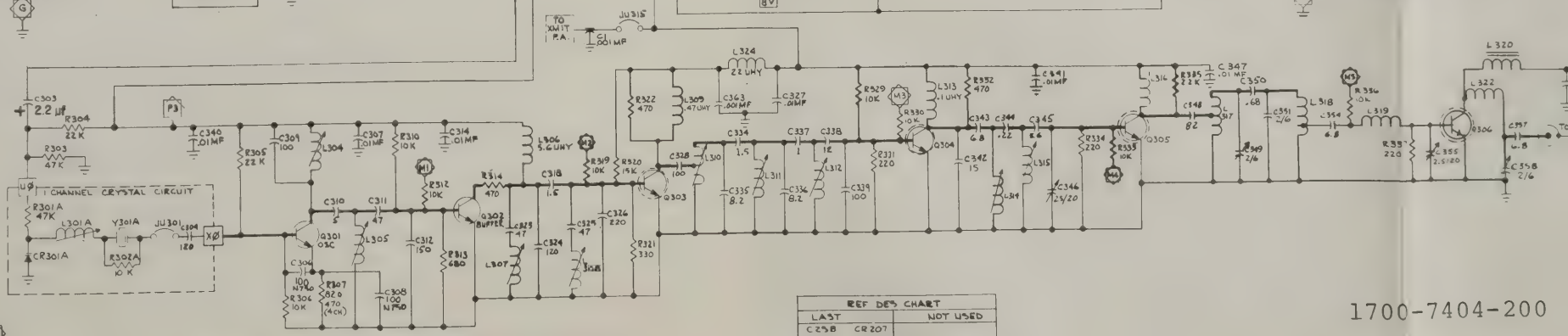
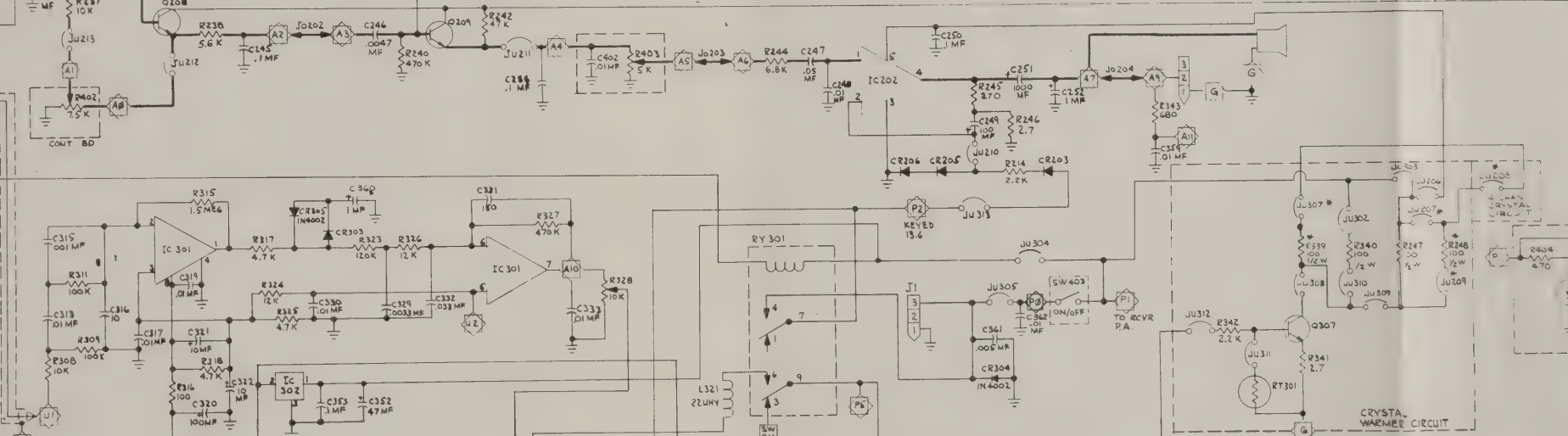
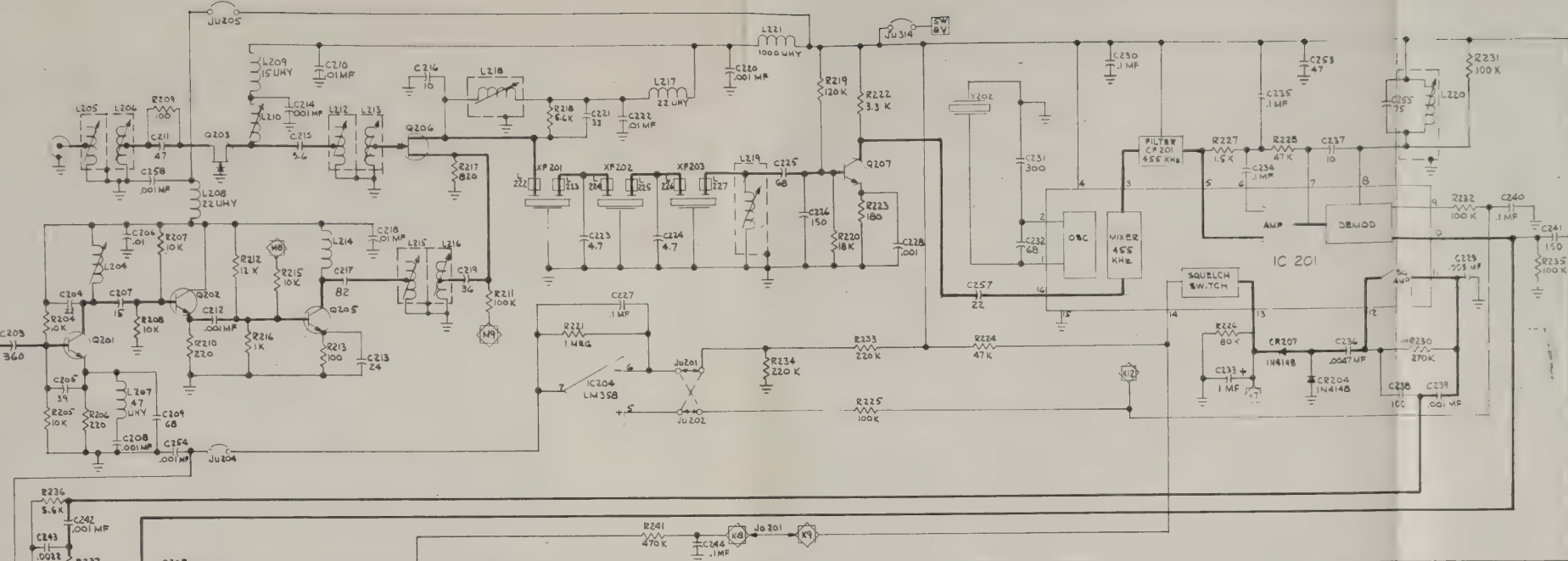
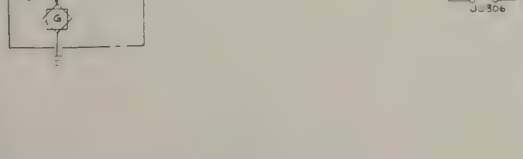
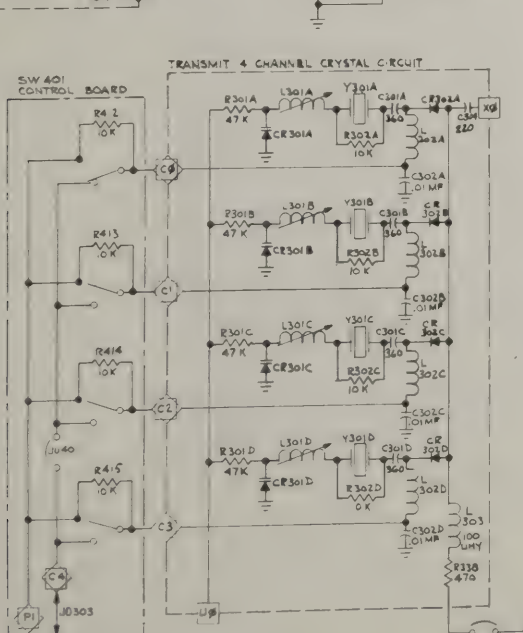
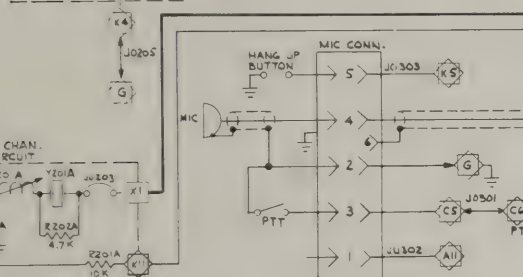
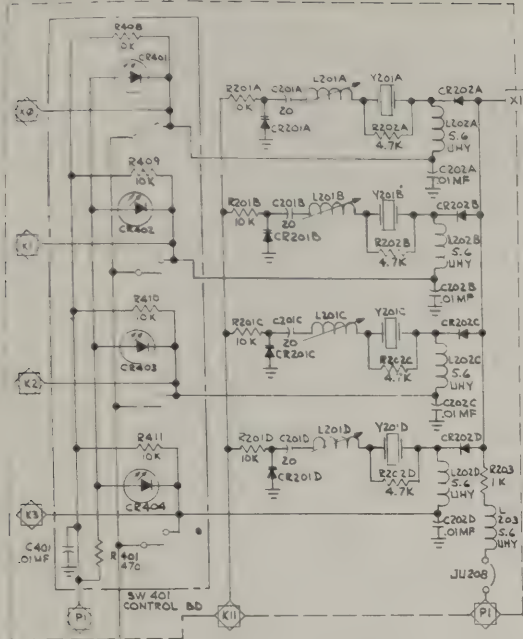
TRANSMIT 4 CHANNEL CRYSTAL CIRCUIT



-7404-200

ZONE	REV	DESCRIPTION	DATE	APPROVED
1	D	EN AA 808	9-5-79	Moore
2	C	ENAA-712	1-1-79	Moore
3	B	EN AA 886	1-1-79	Moore
4	A	RELEASE R-050	1-1-79	Moore
REVISIONS				
SCHEMATIC MAIN BOARD 704-038				

RECEIVE 4 CHANNEL CRYSTAL CIRCUIT



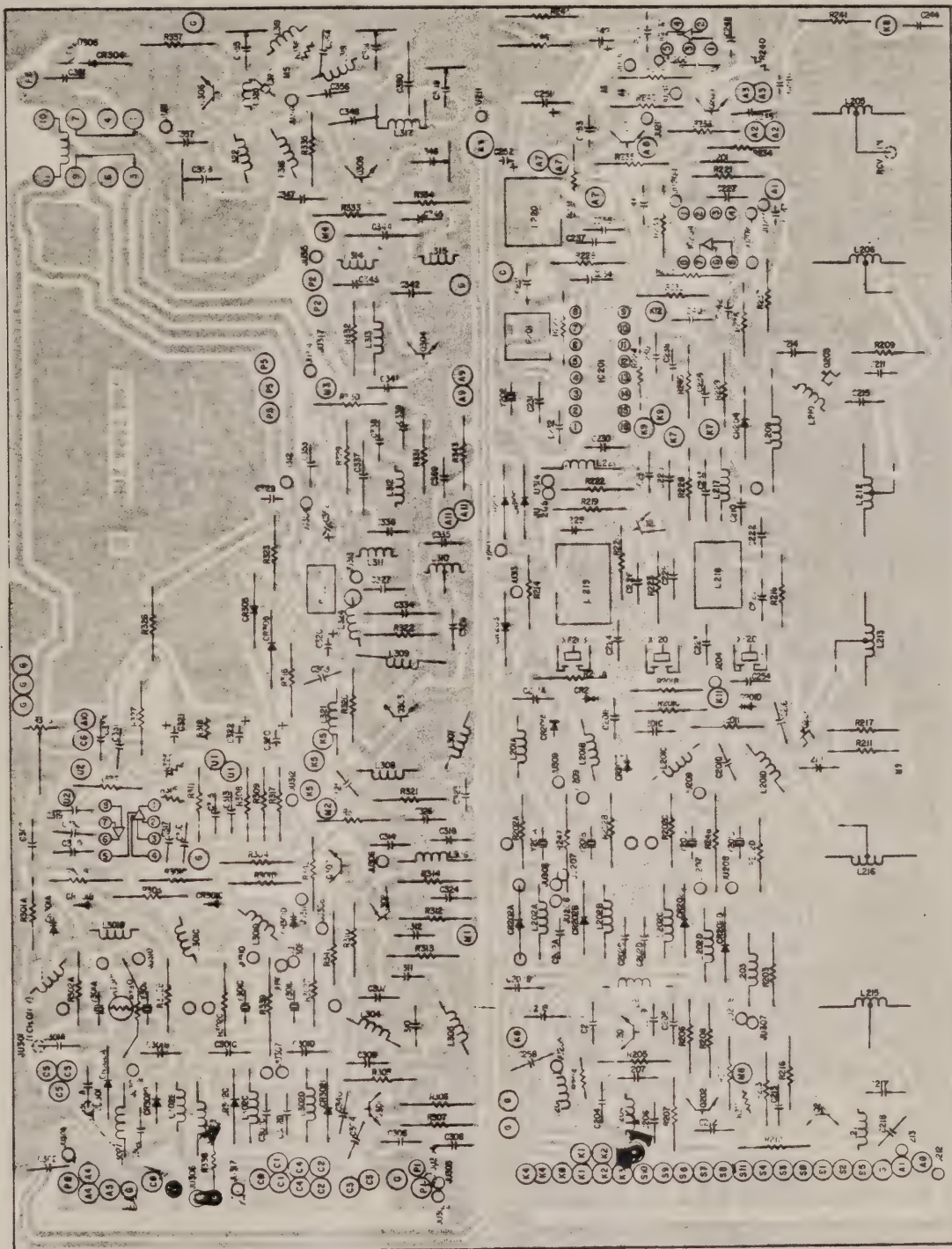
- NOTES
- ALL CAPACITOR VALUES NOT SPECIFIED OTHERWISE ARE PICO-FARAD
 - ALL RESISTOR VALUES NOT SPECIFIED OTHERWISE ARE OHMS 1/4W
 - 2. DENOTES PIN LOCATED ON PC BOARD
 - DENOTES CIRCUIT TIE POINT
 - DENOTES SOLDERED IN JUMPERS
 - DENOTES HARDWIRED JUMPERS—USER SELECTED
 - DENOTES PLUGGED IN JUMPERS (OPTIONAL)
 - DENOTES BOARD BOUNDARIES
 - DENOTES OPTION VARIATIONS
 - * DENOTES PARTS VARIABLE WITH MODEL

REF DES CHART	
LAST	NOT USED
C258	CR207
C303	CR305
R248	IC302
R343	C305
Q209	R239 - R243, R123
Q207	Q204
IC204	IC203
L227	L211
L224	L323

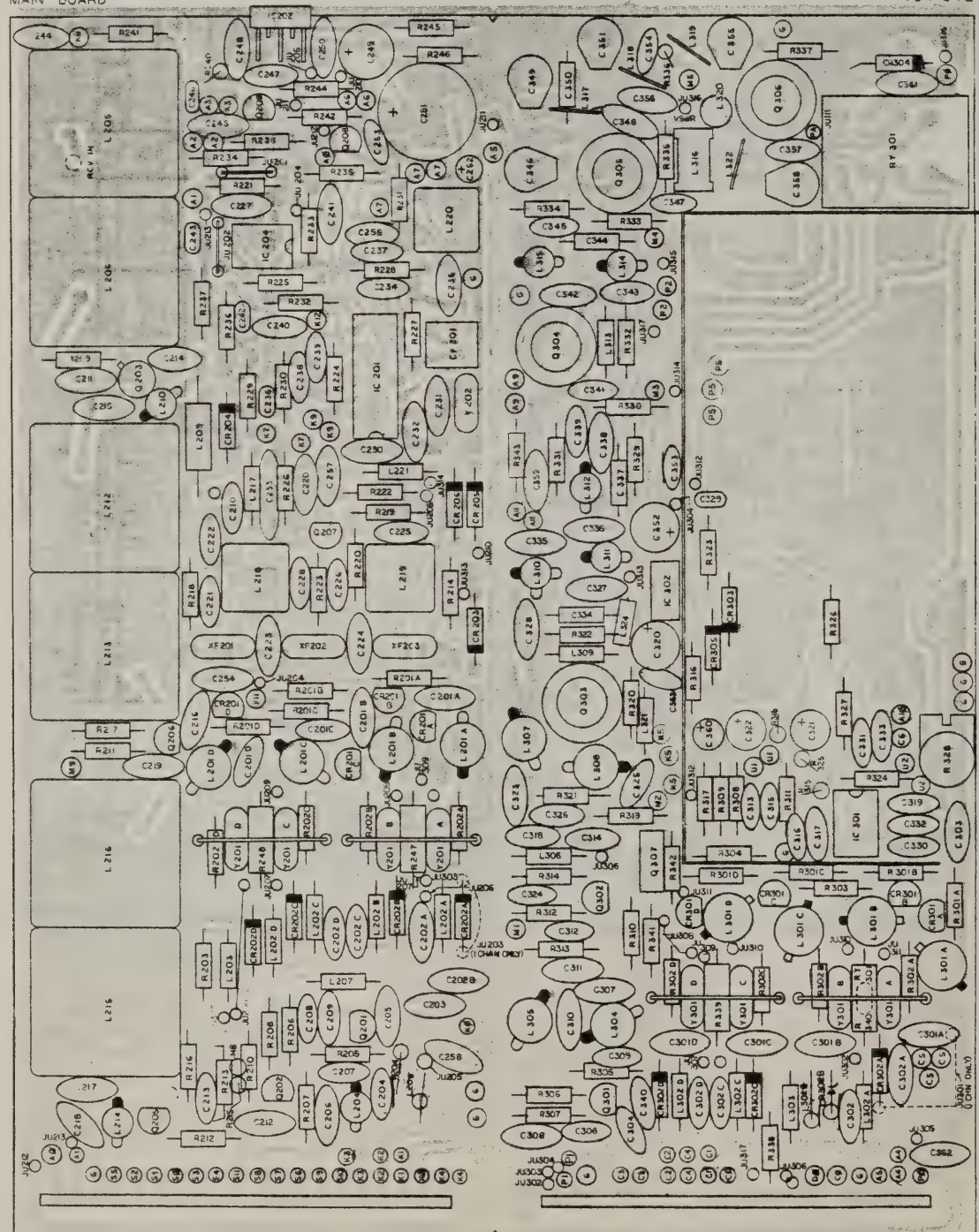
1700-7404-200

EN AA 808	9 5 79	Moore
RELEASE	DESCRIPTION	DATE
REVISIONS		APPROVED

SCHEMATIC
MAIN BOARD
704-038



704-042



1

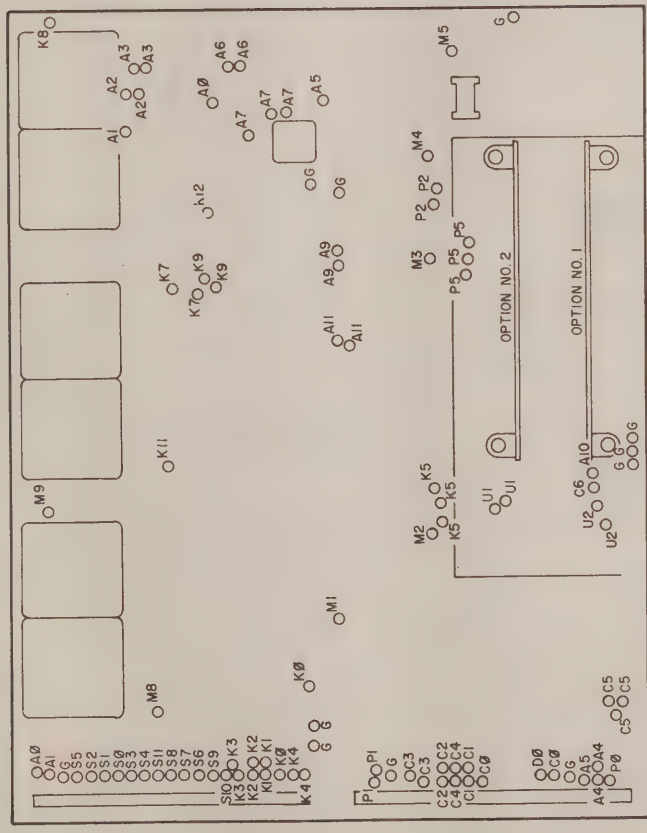
SH. REV. A

DWG. NO. 304-120

3

4

REVISIONS			
ZONE	REV	DESCRIPTION	DATE
—	A	RELEASE R-053	9-15-78
			APPROVED
			BUJ



1700-7404-200

COMMUNICATIONS INC. SATELLITE BEACH, FLORIDA 32937		DATE	9-14-78
Regency		APPROVALS	DRM C.M.F.C.
OPTION TIE POINTS MAIN BOARD		CHECKED	
304-120		DFTG. SUPV.	
SIZE B		ENG. SUPV.	9-15-78
PART NUMBER		MATERIAL	
304-120		FINISH	
SCALE		DO NOT SCALE DWG.	
SHEET 1 OF 1		APPLICATION	
MCU 30		NEXT ASSY	
USED ON		DO NOT SCALE DWG.	

REISNOT GRAPHICS/ACCUPRESS
RENDERING 10/1/78

PARTS LIST

MICROCOM U30 AND MICROCOM U15

MAIN BOARD - 1700-7404-200

TRANSMITTER

RESISTORS

(All Resistors are $\pm 10\%$, $\frac{1}{2}W$, unless otherwise noted.)

LOCATION	DESCRIPTION	PART NO.
R301A	47K	4701-0473-042
R301B	47K	4701-0473-042 (4ch only)
R301C	47K	4701-0473-042 (4ch only)
R301D	47K	4701-0473-042 (4ch only)
R302A	10K	4701-0103-042
R302B	10K	4701-0103-042 (4ch only)
R302C	10K	4701-0103-042 (4ch only)
R302D	10K	4701-0103-042 (4ch only)
R303	47K	4701-0473-042
R304	22K	4701-0223-042
R305	22K	4701-0223-042
R306	10K	4700-0103-042
R307	820 Ohms	4700-0821-042 (1ch only)
R307	470 Ohms	4700-0471-042 (4ch only)
R308	10K	4701-0103-042
R309	100K	4701-0104-042
R310	10K	4701-0103-042
R311	100K	4701-0104-042
R312	10K	4701-0103-042
R313	680 Ohms	4700-0681-042
R314	470 Ohms	4700-0471-042
R315	1.5M	4701-0155-042
R316	100 Ohms	4701-0101-042
R317	4.7K	4701-0472-042
R318	4.7K	4701-0472-042
R319	10K	4701-0103-042
R320	15K	4701-0153-042
R321	330 Ohms	4700-0331-042
R322	470 Ohms	4700-0471-042
R323	120K	4701-0124-042
R324	12K	4701-0123-042
R325	4.7K	4701-0472-042
R326	12K	4701-0123-042
R327	470K	4701-0474-042
R328	10K var	4751-0103-001
R329	10K	4701-0103-042
R330	10K	4701-0103-042
R331	220 Ohms	4700-0221-042
R332	470 Ohms	4700-0471-042
R333	10K	4701-0103-042
R334	220 Ohms	4700-0221-042
R335	2.2K	4700-0222-042
R336	10K	4701-0103-042
R337	220 Ohms	4700-0221-042
R338	470 Ohms	4700-0471-042 (4ch only)
R339	100 Ohms 10% , $\frac{1}{2}W$	4700-0101-044 (4ch only)
R340	100 Ohms 10% , $\frac{1}{2}W$	4700-0101-044

LOCATION	DESCRIPTION	PART NO.
R341	2.7 Ohms	4700-0279-042
R342	2.2K	4700-0222-042
R343	680 Ohms	4701-0681-042

CAPACITORS

C301A	360PF 5% 50V(MICA)	1506-0361-550
C301B	360PF 5% 50V(MICA)	1506-0361-550 (4ch only)
C301C	360PF 5% 50V(MICA)	1506-0361-550 (4ch only)
C301D	360PF 5% 50V(MICA)	1506-0361-550 (4ch only)
C302A	.01MF 50V +8-2 (DISC)	1503-0103-007 (4ch only)
C302B	.01MF 50V +8-2 (DISC)	1503-0103-007 (4ch only)
C302C	.01MF 50V +8-2 (DISC)	1503-0103-007 (4ch only)
C302D	.01MF 50V +8-2 (DISC)	1503-0103-007 (4ch only)
C303	2.2MF 10V (TANT)	1515-0229-002
C304	120PF 5% 50V(MICA)	1506-0121-550 (1ch only)
C304	220 PF 5% 50V(MICA)	1506-0221-550 (4ch only)
C305	Not Used	
C306	100PF 10% 50V(DISC)	1525-0101-004
C307	.01MF +8-2 50V(DISC)	1503-0103-007
C308	100PF 10% 50V(DISC)	1525-0101-004
C309	100PF 5% 50V(MICA)	1506-0101-550
C310	5PF 10% 500V(DISC)	1500-0050-905
C311	47PF 5% 50V(DISC)	1524-0470-002
C312	150PF 5% 50V(MICA)	1506-0151-550
C313	.01MF +8-2 50V(DISC)	1503-0103-007
C314	.01MF +8-2 50V(DISC)	1503-0103-007
C315	.001MF +8-2 50V(DISC)	1503-0102-003
C316	10PF 10% 500V(DISC)	1500-0100-905
C317	.01MF +8-2 50V(DISC)	1503-0103-007
C318	1.5PF 2.5 500V(DISC)	1500-0159-205
C319	.01MF +8-2 50V(DISC)	1503-0103-007
C320	100MF 10V(ELEC)	1513-0101-001
C321	10MF 25V(ELEC)	1513-0100-003
C322	10MF 25V(ELEC)	1513-0100-003
C323	47PF 5% 50V(DISC)	1524-0470-002
C324	120PF 5% 50V(MICA)	1506-0121-550
C325	47PF 5% 50V(DISC)	1524-0470-002
C326	220PF 5% 50V(MICA)	1506-0221-550
C327	.01MF +8-2 50V(DISC)	1503-0103-007
C328	100PF 5% 50V(MICA)	1506-0101-550
C329	.0033MF 10% 100VM(MY)	1508-0332-610
C330	.01MF +8-2 50V (DISC)	1503-0103-007
C331	150 PF 5% 50V (MICA)	1506-0151-550
C332	.033MF 10% 100V(MY)	1508-0333-610
C333	.01MF +8-2 50V(DISC)	1503-0103-007
C334	1.5PF 50V NPO (DISC)	1500-0159-250
C335	8.2PF 10% 500V(DISC)	1500-0829-905
C336	8.2PF 10% 500V(DISC)	1500-0829-905
C337	1PF 10% (MUD)	1510-0010-900
C338	12PF 10% 500V(DISC)	1500-0120-605
C339	100PF 5% 50V(MICA)	1506-0101-550
C340	.01MF +8-2 50V(DISC)	1503-0103-007

LOCATION	DESCRIPTION	PART NO.
C341	.01MF +8-2 50V(DISC)	1503-0103-007
C342	15PF 10% 500V(DISC)	1501-0150-001
C343	6.8PF 10% 500V(DISC)	1500-0689-905
C344	.22PF 10% (MUD)	1510-0228-900
C345	5.6PF 10% 500V(DISC)	1500-0569-905
C346	2.5-20PF TRIM	1517-0000-034
C347	.01MF +8-2 50V(DISC)	1503-0103-007
C348	82PF 5% 50V(MICA)	1506-0820-550
C349	2-6PF TRIM	1517-0000-035
C350	.68PF 10% (MUD)	1510-0688-900
C351	2-6PF TRIM	1517-0000-035
C352	47MF 16V(ELEC)	1513-0470-002
C353	.1MF 20% 12V(MICA)	1502-0104-005
C354	6.8PF 10% 500V(DISC)	1500-0689-905
C355	2.5-20PF TRIM	1517-0000-034
C356	.01MF 8+-2 50V(DISC)	1503-0103-007
C357	6.8PF 10% 500V(DISC)	1500-0689-905
C358	2-6PF TRIM	1517-0000-035
C359	.01MF +8-2 50V(DISC)	1503-0103-007
C360	1MF 50V(ELEC)	1513-0010-004
C361	.005MF +8-2 50V(DISC)	1503-0502-005
C362	.01MF +8-2 50V(DISC)	1503-0103-007
C363	.001MF +8-2 50V(DISC)	1503-0102-003

COILS

L301A	coil, RF variable tap	1800-3247-201	
L301B	coil, RF variable tap	1800-3247-201	(4ch only)
L301C	coil, RF variable tap	1800-3247-201	(4ch only)
L301D	coil, RF variable tap	1800-3247-201	(4ch only)
L302A	choke 100 uhy	1802-0101-008	(4ch only)
L302B	choke 100 uhy	1802-0101-008	(4ch only)
L302C	choke 100 uhy	1802-0101-008	(4ch only)
L302D	choke 100 uhy	1802-0101-008	(4ch only)
L303	choke 100 uhy	1802-0101-008	(4ch only)
L304	coil RF variable	1800-3191-404	
L305	coil RF variable	1800-3191-405	
L306	choke 5.6 uhy	1802-0569-008	
L307	coil RF variable	1800-3191-405	
L308	coil RF variable	1800-3191-405	
L309	choke .47 uhy	1802-0478-008	
L310	coil RF variable	1800-5100-524	
L311	coil RF variable	1800-5124-520	
L312	coil RF variable	1800-5100-520	
L313	choke .1 uhy	1802-0108-008	
L314	coil RF variable	1800-5100-511	
L315	coil RF variable	1800-5100-511	
L316	choke	1803-5125-904	
L317	coil RF loop	1801-3247-401	
L318	coil RF loop	1801-3247-401	

MAIN BOARD - 1700-7404-200

<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
L319	coil RF loop	1801-3247-401
L320	bead, choke	2502-3254-101
L321	choke 22 uhy	1802-0220-008
L322	coil RF loop	1802-3247-401
L323	Not Used	
L324	choke 22 uhy	1802-0220-008

TRANSISTORS

Q301	NPN SPS-1476	4801-0000-003
Q302	NPN SPS-1473	4801-0000-035
Q303	301-696-5	4804-3169-605
Q304	301-696-5	4804-3169-605 (lo range only)
Q304	301-696-7	4804-3169-607 (hi range only)
Q305	301-696-7	4808-3169-607
Q306	301-696-7	4808-3169-607
Q307	Darlington D40C1	4814-0000-002

DIODES

CR301A	varicap	4809-5420-600
CR301B	varicap	4809-5420-600 (4ch only)
CR301C	varicap	4809-5420-600 (4ch only)
CR301D	varicap	4809-5420-600 (4ch only)
CR302A	germanium	4807-1233-900 (4ch only)
CR302B	germanium	4807-1233-900 (4ch only)
CR302C	germanium	4807-1233-900 (4ch only)
CR302D	germanium	4807-1233-900 (4ch only)
CR303	IN4002	4806-0000-004
CR304	IN4002	4806-0000-004
CR305	IN4002	4806-0000-004

INTEGRATED CIRCUITS

IC301	LM 358 N	3130-3167-909
IC302	8V reg LM341P-8	3130-0000-023

MISCELLANEOUS

RT301	thermistor	5300-0000-001
RY301	relay 12V	4500-3251-900

RECEIVERRESISTORS (All Resistors are +10%, $\frac{1}{4}$ W, unless otherwise noted.)

<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
R201A	10K	4701-0103-042
R201B	10K	4701-0103-042 (4ch only)
R201C	10K	4701-0103-042 (4ch only)
R201D	10K	4701-0103-042 (4ch only)
R202A	4.7K	4701-0472-042
R202B	4.7K	4701-0472-042 (4ch only)
R202C	4.7K	4701-0472-042 (4ch only)
R202D	4.7K	4701-0472-042 (4ch only)
R203	1K	4701-0102-042 (4ch only)
R204	10K	4701-0103-042
R205	10K	4701-0103-042
R206	220 Ohms	4700-0221-042
R207	10K	4700-0103-042
R208	10K	4700-0103-042
R209	100 Ohms	4700-0101-042
R210	220 Ohms	4700-0221-042
R211	100K	4701-0104-042
R212	12K	4701-0123-042
R213	100 Ohms	4700-0101-042
R214	2.2K	4701-0222-042
R215	10K	4701-0103-042
R216	1K	4700-0102-042
R217	820 Ohms	4700-0821-042
R218	5.6K	4701-0562-042
R219	120K	4701-0124-042
R220	18K	4701-0183-042
R221	1 meg	4701-0105-042
R222	3.3K	4701-0332-042
R223	180 Ohms	4700-0181-042
R224	47K	4701-0473-042
R225	100K	4701-0104-042
R226	180K	4701-0184-042
R227	1.5K	4701-0152-042
R228	47K	4701-0473-042
R229	not used	
R230	270K	4701-0274-042
R231	100K	4701-0104-042
R232	100K	4701-0104-042
R233	220K	4701-0224-042
R234	220K	4701-0224-042
R235	100K	4701-0104-042
R236	5.6K	4701-0562-042
R237	10K	4701-0103-042
R238	5.6K	4701-0562-042
R239	Not Used	
R240	470K	4701-0474-042

LOCATION	DESCRIPTION	PART NO.
R241	470K	4701-0474-042
R242	47K	4701-0473-042
R243	Not Used	
R244	6.8K	4701-0682-042
R245	270 Ohms	4701-0271-042
R246	2.7 Ohms	4701-0279-042
R247	100 Ohms 10%, $\frac{1}{2}$ W	4700-0101-044
R248	100 Ohms 10%, $\frac{1}{2}$ W	4700-0101-044 (4ch only)

CAPACITORS

C201A	20PF 10% 50V(DISC)	1500-0200-650	
C201B	20PF 10% 50V(DISC)	1500-0200-650	(4ch only)
C201C	20PF 10% 50V(DISC)	1500-0200-650	(4ch only)
C201D	20PF 10% 50V(DISC)	1500-0200-650	(4ch only)
C202A	.01MF +8-2 50V(DISC)	1503-0103-007	(4ch only)
C202B	.01MF +8-2 50V(DISC)	1503-0103-007	(4ch only)
C202C	.01MF +8-2 50V(DISC)	1503-0103-007	(4ch only)
C202D	.01MF +8-2 50V(DISC)	1503-0103-007	(4ch only)
C203	360PF 5% 50V(MICA)	1506-0361-550	
C204	22PF 10% 50V(MICA)	1500-0220-650	(lo range only)
C204	20PF 10% 50V(DISC)	1500-0200-650	(hi range only)
C205	39PF 5% 500V(DISC)	1500-0390-505	
C206	.01MF +8-2% 500V(DISC)	1503-0103-007	
C207	15PF 10% 500V(DISC)	1501-0150-001	
C208	.001MF +8-2%(DISC)	1503-0102-003	
C209	68PF 5% 50V(DISC)	1524-0680-002	
C210	.01MF +9-2% 500V(DISC)	1503-0103-007	
C211	47PF 5% 50V(DISC)	1524-0470-002	
C212	.001MF +8-2%(DISC)	1503-0102-003	
C213	24PF 10% 50V(DISC)	1500-0240-650	
C214	.001MF +8-2%(DISC)	1503-0102-003	
C215	5.6PF 10% 500V(DISC)	1500-0569-905	
C216	10Pf 10% 500V(DISC)	1500-0100-905	
C217	82PF 5% 50V(MICA)	1506-0820-550	
C218	.01MF +8-2% 50V(DISC)	1503-0103-007	
C219	36PF 5% 50V(DISC)	1500-0360-550	
C220	.001MF +8-2%(DISC)	1503-0102-003	
C221	33PF 10% 50V(DISC)	1500-0330-650	
C222	.01MF +8-2% 50V(DISC)	1503-0103-007	
C223	4.7PF 10% 500V(DISC)	1500-0479-905	
C224	4.7PF 10% 500V(DISC)	1500-0479-905	
C225	68PF 5% 50V(DISC)	1524-0680-002	
C226	150PF 5% 50V(MICA)	1506-0151-550	
C227	.1MF 20% 12V(DISC)	1502-0104-005	
C228	.001MF +8-2%(DISC)	1503-0102-003	
C229	not used		
C230	.1MF 20% 12V(DISC)	1502-0104-005	
C231	300PF 5% 50V(MICA)	1506-0402-550	
C232	68PF 5% 50V(DISC)	1524-0680-002	
C233	1MF 20% 15V(TANT)	1515-0010-003	
C234	.1MF 20% 12V(DISC)	1502-0104-005	
C235	.1MF 20% 12V(DISC)	1502-0104-005	

LOCATION	DESCRIPTION	PART NO.
C236	.0047MF 10% 100V(MYLAR)	1508-0472-610
C237	10PF 10% 500V(DISC)	1500-1000-905
C238	100PF 5% 50V LCQ-17(MICA)	1506-0101-550
C239	.001 +8-2% 50V(DISC)	1503-0102-003
C240	.1MF 20% 12V(DISC)	1502-0104-005
C241	150PF 20% 500V(DISC)	1523-0151-001
C242	.001MF 10% 100V(MYLAR)	1508-0102-610
C243	.0022MF 5% 100V(MYLAR)	1508-0222-510
C244	.01MF +8-2% 500V(DISC)	1503-0103-007
C245	.1MF 20% 12V(DISC)	1502-0104-005
C246	.0047MF 10% 100V(MYLAR)	1508-0472-610
C247	.05MF +8-2 (DISC)	1501-0503-003
C248	.01MF +8-2% 50V(DISC)	1503-0103-007
C249	100 MF 16V(ELEC)	1513-0101-002
C250	.1MF 20% 12V(DISC)	1502-0104-005
C251	1000MF 16V(ELEC)	1513-0102-002
C252	1MF 20% 15V(TANT)	1515-0010-003
C253	47PF 5% 50V(DISC)	1524-0470-002
C254	.001MF +8-2%(DISC)	1503-0102-003
C255	75PF 5% 50V(DISC)	1524-0750-002
C256	Not Used	
C257	22PF 10% 50V(DISC)	1500-0220-650
C258	.001 MF +8-2% 50V(DISC)	1503-0102-003
DIODES		
CR201A	Varicap MV1172	4809-0000-001
CR201B	Varicap MV1172	4809-0000-001 (4ch only)
CR201C	Varicap MV1172	4809-0000-001 (4ch only)
CR201D	Varicap MV1172	4809-0000-001 (4ch only)
CR202A	Germanium	4807-1233-900 (4ch only)
CR202B	Germanium	4807-1233-900 (4ch only)
CR202C	Germanium	4807-1233-900 (4ch only)
CR202D	Germanium	4807-1233-900 (4ch only)
CR203	IN4148	4805-1241-200
CR204	IN4148	4805-1241-200
CR205	IN4148	4805-1241-200
CR206	IN4148	4805-1241-200
CR207	IN4148	4805-1241-200

TRANSISTORS

Q201	NPN 2N5130	4801-0000-095
Q202	NPN SPS-1476	4801-0000-003
Q203	FET U310	4811-3406-200

LOCATIONDESCRIPTIONPART NO.

Q204	Not Used	
Q205	NPN SPS-1476	4801-0000-003
Q206	FET 2N5668	4811-0000-030
Q207	NPN SPS-1473	4801-0000-035
Q208	NPN SPS-952	4801-0000-010
Q209	NPN SPS-952	4801-0000-010

INTEGRATED CIRCUITS

IC201	FM	3130-5127-100
IC202	TDA 2002 AD	3130-5407-602
IC203	Not Used	
IC204	LM358N	3130-3167-909

FILTERS

XF201	filter, Xtal	2705-3232-200
XF202	filter, Xtal	2705-1306-600
XF203	filter, Xtal	2705-3232-200
CF201	filter, ceramic	2700-3209-500

CRYSTAL

Y202	10.245 MHz	2301-3151-601
------	------------	---------------

COILS

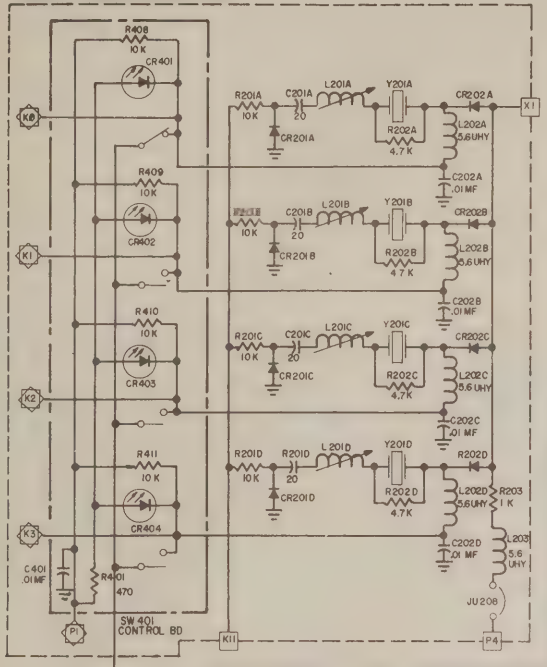
L201A	coil, variable	1800-3191-406	
L201B	coil, variable	1800-3191-406	(4ch only)
L201C	coil, variable	2800-3191-406	(4ch only)
L201D	coil, variable	1800-3191-406	(4ch only)
L202A	choke, 5.6 uhy	1802-0569-008	(4ch only)
L202B	choke, 5.6 uhy	1802-0569-008	(4ch only)
L202C	choke, 5.6 uhy	1802-0569-008	(4ch only)
L202D	choke, 5.6 uhy	1802-0569-008	(4ch only)
L203	choke, 5.6 uhy	1802-0569-008	(4ch only)
L204	coil, variable	1800-5100-521	
L205	coil, variable	1800-5129-101	(lo range only)
L205	coil, variable	1800-5129-105	(hi range only)
L206	coil, variable	1800-5129-102	(lo range only)
L206	coil, variable	1800-5129-106	(hi range only)
L207	choke, .47 uhy	1802-0478-006	
L208	choke, 22 uhy	1802-0220-008	
L209	choke, 15 uhy	1802-0150-004	
L210	choke, RF	1800-5100-522	
L211	not used		
L212	coil, variable	1800-5129-103	(lo range only)
L212	coil, variable	1800-5129-107	(hi range only)
L213	coil, variable	1800-5129-102	(lo range only)
L213	coil, variable	1800-5129-106	(hi range only)

MAIN BOARD - 1700-7404-200LOCATIONDESCRIPTIONPART NO.

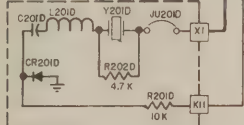
L214	choke, RF	1800-5100-523	
L215	coil, variable	1800-5129-104	(lo range only)
L215	coil, variable	1800-5129-108	(hi range only)
L216	coil, variable	1800-5129-102	(lo range only)
L216	coil, variable	1800-5129-109	(hi range only)
L217	choke, 22 uhy	1802-0220-008	
L218	coil 10.7 IF	1800-3248-001	
L219	coil 10.7 IF	1800-3248-001	
L220	coil	1800-3409-201	
L221	choke, 1000 uhy	1800-3409-201	
L222	Bead choke	2502-0000-001	
L223	Bead choke	2502-0000-001	
L224	Bead choke	2502-0000-001	
L225	Bead choke	2502-0000-001	
L226	Bead choke	2502-0000-001	
L227	Bead choke	2502-0000-001	

RECEIVE 4 CHANNEL CRYSTAL CIRCUIT

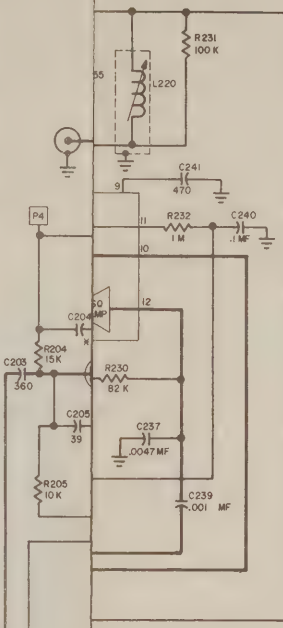
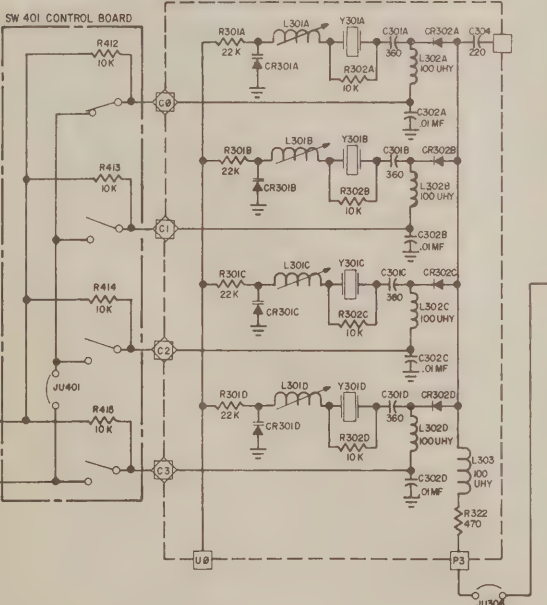
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
C	REDAIN	PER 34 AA 33		
D	AA 931		10-26-79	DAJ



RCVR 1 CHAN XTAL CIRCUIT



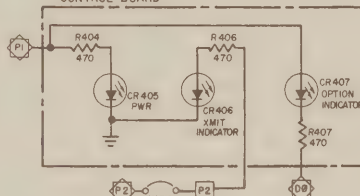
TRANSMIT 4 CHANNEL CRYSTAL CIRCUIT



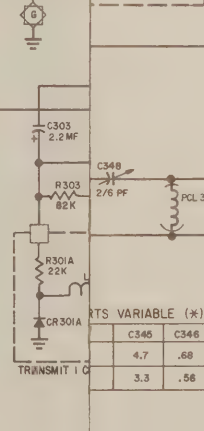
NOTES:

- All capacitor values not specified otherwise are Pico-Farad.
- All resistor values not specified otherwise are Ohms, 1/4 watt.
- Parts marked with a (*) are variable with model (see parts variable).
- Part numbers indicate location.
 - 0-99 Chassis mounted parts
 - 100-199 P. A. Deck board
 - 200-299 Receiver section (Main board)
 - 300-399 Transmitter section (Main board)
 - 400-499 Control panel board
- Denotes pin located on P.C. Board
- Denotes circuit in jumper
- Denotes soldered in jumpers
- Denotes hardware jumpers - user selected
- Denotes plugged in jumpers (optional)
- Indicates board boundaries
- Indicates option variations
- This schematic is used in conjunction with P.C. Board 704-064, Parts Placement/ Silkscreen 704-062 and Artwork 704-061.

CONTROL BOARD



CRYSTAL WARMER CIRCUIT



REF. DESIGNATIONS	
LAST USED	NOT USED
C256	C256
C356	C318, C323
R248	R338
R339	
Q207	
Q308	
IC 203	
L227	L211
L324	
IC 302	
JO 205	
JO 303	
JU 214	
JU 319	JO 302

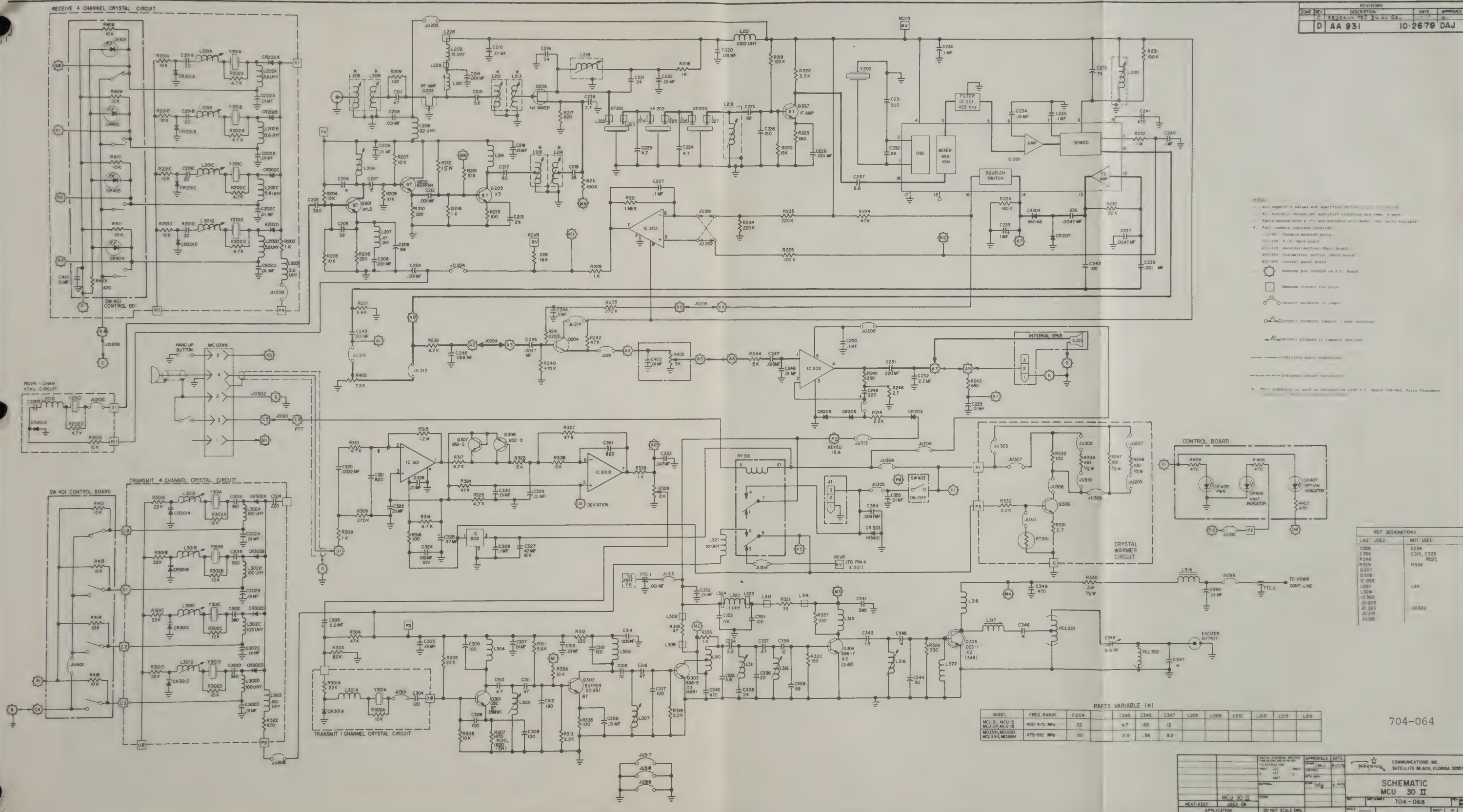
RTS VARIABLE (*)

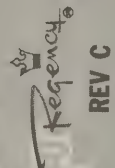
C345	C346	C347	L205	L206	L212	L213	L215	L216
4.7	.68	12						
3.3	.56	8.2						

704-064

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONAL DECIMAL ANGLES HOLE DIA. HOLE DIA. HOLE DIA. HOLE DIA.		APPROVALS DATE DRAWN CMCC 9-17-79 CHECKED DATE 5-2-79	COMMUNICATIONS INC. SATELLITE BEACH, FLORIDA 32957
MATERIAL		SCHEMATIC MCU 30 II	704-068
NEXT ASSY USED ON		SCALE	SHEET 1 OF 1
APPLICATION		DO NOT SCALE DIMS	

<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>	
L214	choke, RF	1800-5100-523	
L215	coil, variable	1800-5129-104	(lo range only)
L215	coil, variable	1800-5129-108	(hi range only)
L216	coil, variable	1800-5129-102	(lo range only)
L216	coil, variable	1800-5129-109	(hi range only)
L217	choke, 22 uhy	1802-0220-008	
L218	coil 10.7 IF	1800-3248-001	
L219	coil 10.7 IF	1800-3248-001	
L220	coil	1800-3409-201	
L221	choke, 1000 uhy	1800-3409-201	
L222	Bead choke	2502-0000-001	
L223	Beac choke	2502-0000-001	
L224	Bead choke	2502-0000-001	
L225	Bead choke	2502-0000-001	
L226	Bead choke	2502-0000-001	
L227	Bead choke	2502-0000-001	





COPY 1-

COPY 1-

704-064

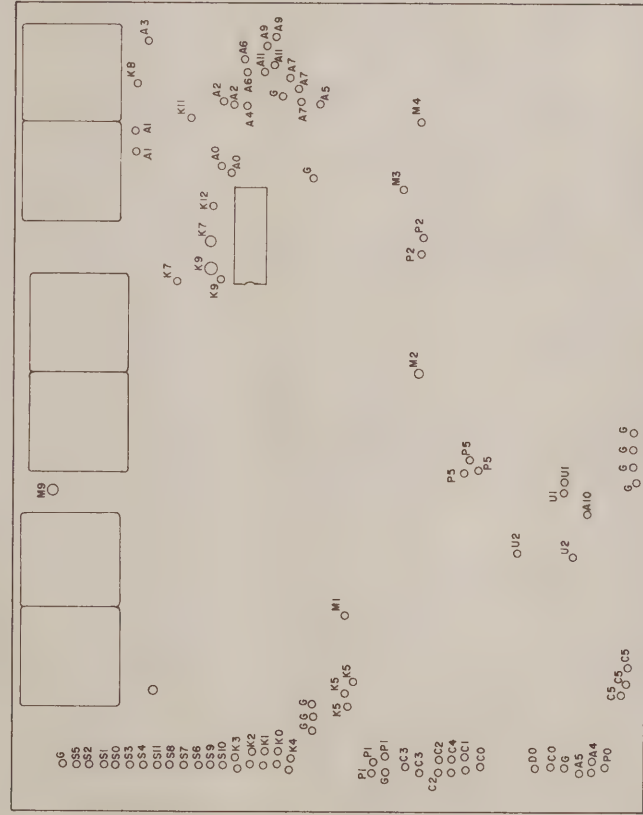
MCU 30 II	SUSSENER / PARTS PLACEMENT MCU 30 II MAIN BD.	F	794-042	G
REV A-2				
DATE 8-25				
DWG. C.A.N.				
APP. C.A.N.				
CN. 10/11/79				

4 3 1

DWG. NO. 304-211

SHI REV. A

REVISIONS			
ZONE	REV	DESCRIPTION	DATE
	A	RELEASE R-221	1-10-80
			Day



PARTS LIST

MICROCOM U30 AND MICROCOM U15

MAIN BOARD - 704-064

TRANSMITTER

RESISTORS (All Resistors are $\pm 5\%$, $\frac{1}{4}W$, unless otherwise noted.)

<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>	
R301A	22K	4704-0223-032	
R301B	22K	4704-0223-032	(4 ch only)
R301C	22K	4704-0223-032	(4 ch only)
R301D	22K	4704-0223-032	(4 ch only)
R302A	10K ohms	4704-0103-032	
R302B	10K ohms	4704-0103-032	(4 ch only)
R302C	10K ohms	4704-0103-032	(4 ch only)
R302D	10K ohms	4704-0103-032	(4 ch only)
R303	82K	4704-0823-032	
R304	47K ohms	4704-0473-032	
R305	22K	4704-0223-032	
R306	10K 1/4W 10%	4700-0103-042	
R307	820 ohms	4700-0821-042	(1 ch only)
R307	470 ohms	4700-0471-042	(4 ch only)
R308	1K	4704-0102-032	
R309	270K	4704-0274-032	
R310	4.7K ohms	4704-0472-032	
R311	5.6K	4704-0562-032	
R312	330 ohms 1/4W 10%	4700-0331-042	
R313	2.2K 1/4W 10%	4700-0222-042	
R314	4.7K ohms	4704-0472-032	
R315	1.2 meg	4704-0125-032	
R316	100 ohms	4704-0101-032	
R317	4.7K ohms	4704-0472-032	
R318	47 ohms	4704-0470-032	
R319	2.2K 1/4W 10%	4700-0222-042	
R320	150 ohms 1/4W 10%	4700-0151-042	
R321	33 ohms 1/4W 10%	4700-0330-042	
R322	470 ohms	4701-0471-042	(4ch only)
R323	15K	4704-0153-032	
R324	47K ohms	4704-0473-032	
R325	4.7K ohms	4704-0472-032	
R326	10K ohms	4704-0103-032	
R327	47K ohms	4704-0473-032	
R328	res var	4751-3407-101	
R329	330 ohms 1/4W 10%	4700-0331-042	
R330	3.9 ohms 1/2W 10%	4701-0399-044	
R331	2.7 ohms 1/4W 10%	4700-0279-042	
R332	2.2K	4704-0222-032	
R333	100 ohms 1/2W 10%	4700-0101-044	
R334	100K ohms 1/2W 10%	4700-0101-044	
R335	100 ohms 1/4W 10%	4700-0101-042	
R336	1K 1/4W 10%	4700-0102-042	
R337	330 ohms 1/4W 10%	4700-0331-042	
R338	1K	4704-0102-032	(4 ch only)
R339	10K ohms	4704-0103-032	(4 ch only)

CAPACITORS

<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>	
C301A	360PF 5% 50V (MICA)	1506-0361-550	
C301B	360PF 5% 50V (MICA)	1506-0361-550	(4ch only)
C301C	360PF 5% 50V (MICA)	1506-0361-550	(4ch only)
C301D	360PF 5% 50V (MICA)	1506-0361-550	(4ch only)
C302A	.01MF 50V +8-2 (DISC)	1503-0103-007	(4ch only)
C302B	.01MF 50V +8-2 (DISC)	1503-0103-007	(4ch only)
C302C	.01MF 50V +8-2 (DISC)	1503-0103-007	(4ch only)
C302D	.01MF 50V +8-2 (DISC)	1503-0103-007	(4ch only)
C303	2.2MF TANT 10V 20	1515-0229-002	
C304	120PF 5% 50V (MICA)	1506-0121-550	(1ch only)
C304	220PF 5% 50V (MICA)	1506-0221-550	(4ch only)
C305	.01MF 50V +8-2 (DISC)	1503-0103-007	
C306	100PF 10% 50V (DISC)	1525-0101-004	
C307	.01MF +8-2 50V (DISC)	1503-0103-007	
C308	100PF 10% 50V (DISC)	1525-0101-004	
C309	100PF 10% 50V NPO (TM)	1539-0101-601	
C310	4.7PF 10% 500V NPO (DISC)	1500-0479-905	
C311	47PF 5% 50V NPO (RD)	1524-0470-002	
C312	180PF 10% 50V NPO (TM)	1539-0181-601	
C313	.01 tub cer 30% 25V	1538-0103-804	
C314	.005MF +8-2 50V (DISC)	1503-0502-005	
C315	120PF 5% 50V LCQ-17 (MICA)	1506-0121-550	
C316	47PF 5% 50V NPO (RD)	1524-0470-002	
C317	100PF 5% 50V LCQ-17 (MICA)	1506-0101-550	
C318	10PF 10% 500V NPO (DISC)	1500-0100-905	
C319	not used		
C320	.0022MF 10% 100V (MY)	1508-0222-610	
C321	820PF 5% 50V LCQ-17 (MICA)	1506-0821-550	
C322	.01MF +8-2 50V (DISC)	1503-0103-007	
C323	not used		
C324	100MF 20V 85D (ELEC)	1513-0101-001	
C325	47MF 16V 85D (ELEC)	1513-0470-002	
C326	.1MF +8-2 50V (DISC)	1503-0104-010	
C327	47MF 16V 85D (ELEC)	1513-0470-002	
C328	tub cer .01 30% 25V	1538-0103-804	
C329	.01MF 10% 100V (MY)	1508-0103-610	
C330	tub cer .01 30% 25V	1538-0103-804	
C331	820PF 5% 50V LCQ-17 (MICA)	1506-0821-550	
C332	.047MF 10% 100V (MY)	1508-0473-610	
C333	22PF 10% 50V NPO (DISC)	1500-0220-650	
C334	2.2PF 10% 500V NPO (DISC)	1500-0229-905	
C335	5.6PF 10% 500V NPO (DISC)	1500-0569-905	
C336	18PF 5% 50V NPO (DISC)	1500-0180-550	
C337	.47PF 10% (MUD)	1510-0478-900	
C338	10PF 10% 500V NPO (DISC)	1500-0100-905	
C339	68PF 10% 500V NPO (DISC)	1524-0680-002	
C340	470PF 20% 50V (DISC)	1523-0471-002	
C341	360PF 5% 50V LCQ-17 (MICA)	1506-0361-550	
C342	not used		

<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
C343	1.5PF 50V NPO(DISC)	1500-0159-250
C344	30PF 10% 500V NPO(DISC)	1500-0300-905
C345	4.7PF 10% 500V NPO(DISC)	1500-0479-905
C346	.68 PF 10% (MUD)	1510-0688-900
C347	12PF 10% 500V NPO(DISC)	1500-0120-605
C348	2-6PF Trimmer	1517-0000-035
C349	470PF 20% 50V Z5F (DISC)	1523-0471-002
C350	tub cer .01 30% 25V	1538-0103-804
C351	100PF 5% 50V LCQ-17(MICA)	1506-0101-550
C352	.01MF +8-2 50V(DISC)	1503-0103-007
C353	.001MF 20% 50V Z5F(DISC)	1523-0102-002
C354	tub cer 4700PF 30% 25V	1538-0472-804
C355	tub cer .01 30% 25V	1538-0103-804
C356	tub cer .01 30% 25V	1538-0103-804

COILS

L301A	coil rf variable	1800-3247-201	
L301B	coil rf variable	1800-3247-201	(4ch only)
L301C	coil rf variable	1800-3247-201	(4ch only)
L301D	coil rf variable	1800-3247-201	(4ch only)
L302A	choke 100 uhy	1802-0101-008	(4ch only)
L302B	choke 100 uhy	1802-0101-008	(4ch only)
L302C	choke 100 uhy	1802-0101-008	(4ch only)
L302D	choke 100 uhy	1802-0101-008	(4ch only)
L303	choke 100 uhy	1802-0101-008	(4ch only)
L304	coil rf var pink	1800-3191-404	
L305	coil rf var green	1800-3191-405	
L306	coil rf var pink	1800-3191-404	
L307	coil rf var green	1800-3191-405	
L308	ferrite bead	2502-0000-001	
L309	ferrite bead	2502-0000-001	
L310	coil	1800-3152-029	
L311	coil	1800-3152-019	
L312	coil	1800-3152-019	
L313	ferrite bead	2502-0000-001	
L314	ferrite bead	2502-0000-001	
L315	choke LM-2	1803-5125-902	
L316	coil	1800-3152-009	
L317	coil	1800-3152-030	
L318	choke molded 1½ turns	1803-5125-907	
L319	choke bead	2502-3254-101	
L320	choke rf .1 uhy	1802-0108-008	
L321	22 uhy	1802-0220-008	
L322	choke LM-2	1803-5125-902	
L323	ferrite bead	2502-0000-001	
L324	ferrite bead	2502-0000-001	

<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
TRANSISTORS		
Q301	Trans Blue Top SPS1476	4801-0000-003
Q302	Trans Blue Top SPS1476	4801-0000-003
Q303	Trans Rf Pwr	4804-3169-605
Q304	Trans Pwr SRF1044K	4804-3169-607
Q305	Trans Rf Pwr	4804-3402-301
Q306	Trans Darlington	4814-0000-002
Q307	Trans SPS 952-2	4801-0000-016
Q308	Trans SPS 952-2	4801-0000-016
DIODES		
CR301A	varicap	4809-5420-600
CR301B	varicap	4809-5420-600 (4ch only)
CR301C	varicap	4809-5420-600 (4ch only)
CR301D	varicap	4809-5420-600 (4ch only)
CR302A	germanium	4807-1233-900 (4ch only)
CR302B	germanium	4807-1233-900 (4ch only)
CR302C	germanium	4807-1233-900 (4ch only)
CR302D	germanium	4807-1233-900 (4ch only)
CR303	diode sil IN5401	4806-0000-013
INTEGRATED CIRCUITS		
IC301	LM358N	3130-3167-909
IC302	Reg 8.0V LM341	3130-0000-023
MISCELLANEOUS		
RT301	thermistor Fenwal	5300-0000-001
RY301	relay 12V	4500-3251-900

RESISTORS (All Resistors are $\pm 5\%$, $\frac{1}{4}W$, unless otherwise noted.)

<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>	
R201A	10K ohms	4704-0103-032	
R201B	10K ohms	4704-0103-032	(4ch only)
R201C	10K ohms	4704-0103-032	(4ch only)
R201D	10K ohms	4704-0103-032	(4ch only)
R202A	4.7K ohms	4704-0472-032	
R202B	4.7K ohms	4704-0472-032	(4ch only)
R202C	4.7K ohms	4704-0472-032	(4ch only)
R202D	4.7K ohms	4704-0472-032	(4ch only)
R203	1K	4701-0102-042	(4ch only)
R204	15K	4704-0153-032	
R205	10K 1/4W 10%	4700-0103-042	
R206	220 ohms 1/4W 10%	4700-0221-042	
R207	10K 1/4W 10%	4700-0103-042	
R208	10K 1/4W 10%	4700-0103-042	
R209	100 ohms	4700-0101-042	
R210	220 ohms 1/4W 10%	4700-0221-042	
R211	100K	4704-0104-032	
R212	15K	4704-0153-032	
R213	100 ohms	4700-0101-042	
R214	2.2K 1/4W 10%	4700-0222-042	
R215	10K ohms	4704-0103-032	
R216	1K	4700-0102-042	
R217	820 ohms 1/4W 10%	4700-0821-042	
R218	1K	4704-0102-032	
R219	120K	4704-0124-032	
R220	15K	4704-0153-032	
R221	1 meg	4704-0105-032	
R222	3.3K ohms	4704-0332-032	
R223	180 ohms 1/4W 10%	4700-0181-042	
R224	47K ohms	4704-0473-032	
R225	100K	4704-0104-032	
R226	180K	4704-0184-032	
R227	not used		
R228	18K ohms	4704-0183-032	
R229	1K	4704-0102-032	
R230	82K	4704-0823-032	
R231	100K	4704-0104-032	
R232	1 meg	4704-0105-032	
R233	220K	4704-0224-032	
R234	220K	4704-0224-032	
R235	270K	4704-0274-032	
R236	not used		
R237	5.6K	4704-0562-032	
R238	8.2K ohms	4704-0822-032	
R239	not used		
R240	470K	4704-0474-032	
R241	220K	4704-0224-032	

<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>	
R242	47K ohms	4704-0473-032	
R243	680 ohms	4704-0681-032	
R244	15K	4704-0153-032	
R245	330 ohms	4704-0331-032	
R246	2.7 ohms	4704-0279-032	
R247	100 ohms 1/2W	4700-0101-044	
R248	100 ohms 1/2W	4700-0101-044	(4ch only)

CAPACITORS

C201A	20PF 10% 50V(DISC)	1500-0200-650	
C201B	20PF 10% 50V(DISC)	1500-0200-650	(4ch only)
C201C	20PF 10% 50V(DISC)	1500-0200-650	(4ch only)
C201D	20PF 10% 50V(DISC)	1500-0200-650	(4ch only)
C202A	.01MF +8-2 50V(DISC)	1503-0103-007	(4ch only)
C202B	.01MF +8-2 50V(DISC)	1503-0103-007	(4ch only)
C202C	.01MF +8-2 50V(DISC)	1503-0103-007	(4ch only)
C202D	.01MF +8-2 50V(DISC)	1503-0103-007	(4ch only)
C203	360PF 5% 50V LCQ-17(MICA)	1506-0371-550	
C204	22PF 10% 50V NPO(DISC)	1500-0220-650	
C205	39PF 5% 500V NPO(DISC)	1500-0390-505	
C206	.01MF +8-2 50V(DISC)	1503-0103-007	
C207	15PF 10 5-0V NPO(DISC)	1501-0150-001	
C208	.001MF +8-2 50V(DISC)	1503-0102-003	
C209	68PF 5% 50V NPO(RD)	1524-0680-002	
C210	.01MF +8-2 50V(DISC)	1503-0103-007	
C211	47PF 5% 50V NPO(RD)	1524-0470-002	
C212	.001MF +8-2 50V(DISC)	1503-0102-003	
C213	24PF 10% 50V NPO(DISC)	1500-0240-650	
C214	.001MF +8-2 50V(DISC)	1503-0102-003	
C215	5.6PF 10% 500V NPO(DISC)	1500-0569-905	
C216	24PF 10% 50V NPO(DISC)	1500-0240-650	
C217	82PF 5% 50V NPO(RD)	1524-0820-002	
C218	tub cer .01 30% 25V	2538-0103-804	
C219	36PF 5% 50V(DISC)	1500-0360-550	
C220	.001MF +8-2 50V(DISC)	1503-0102-003	
C221	24PF 10% 50V NPO(DISC)	1500-0240-650	
C222	.01MF +8-2 (DISC)	1503-0103-007	
C223	4.7PF 10% 500V NPO(DISC)	1500-0479-905	
C224	4.7PF 10% 500V NPO(DISC)	1500-0479-905	
C225	68PF 5% 50V NPO(RD)	1524-0680-002	
C226	150PF 10% 50V NPO (TM)	1539-0151-601	
C227	.1MF 20% 12V BC-12 (MC)	1502-0104-005	
C228	.001MF +8-2(DISC)	1503-0102-003	
C229	.01MF +8-2 50V(DISC)	1503-0103-007	
C230	.1MF 20% 12V BC-12(MC)	1502-0104-005	
C231	300PF 5% 50V LCQ-17(MICA)	1506-0301-550	
C232	68PF 5% 50V NPO(RD)	1524-0680-002	
C233	1 MF 20% 15V(TANT)	1515-0010-003	
C234	.01MF +8-2 50V(DISC)	1503-0102-007	
C235	.1MF 20% 12V BC-12(MC)	1502-0104-005	

<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
C236	0047MF 10% 100V(MY)	1508-0472-610
C237	0047MF 10% 100V(MY)	1508-0472-610
C238	not used	
C239	.001MF 10% 100V(MY)	1508-0102-610
C240	.1MF 20% 12V BC-12(MC)	1502-0104-005
C241	470PF 10% 50V(DISC)	1523-0471-002
C242	100PF 5% 50V LCQ-17(MICA)	1506-0101-550
C243	.001MF 10% 100V(MY)	1508-0102-610
C244	.2MF 12V +8-2(MC)	1502-0204-006
C245	.068MF 10% 100V(MY)	1508-0683-610
C246	0047MF 10% 100V(MY)	1508-0472-610
C247	.015MF 10% 100V(MY)	1508-0153-610
C248	.01MF 10% 100V(MY)	1508-0103-610
C249	220MF 16V 85D(ELEC)	1513-0221-002
C250	.1MF 20% 12V BC-12(MC)	1502-0104-005
C251	220MF 16V 85D(ELEC)	1513-0221-002
C252	2.2MF 20% 25V(TANT)	1515-0229-005
C253	not used	
C254	.001MF +8-2 50V(DISC)	1503-0102-003
C255	75PF 5% 50V NPO(RD)	1524-0750-002
C256	not used	
C257	6.8PF 10% 500V NPO(DISC)	1500-0689-905
C258	.001MF +8-2 50V(DISC)	1503-0102-003

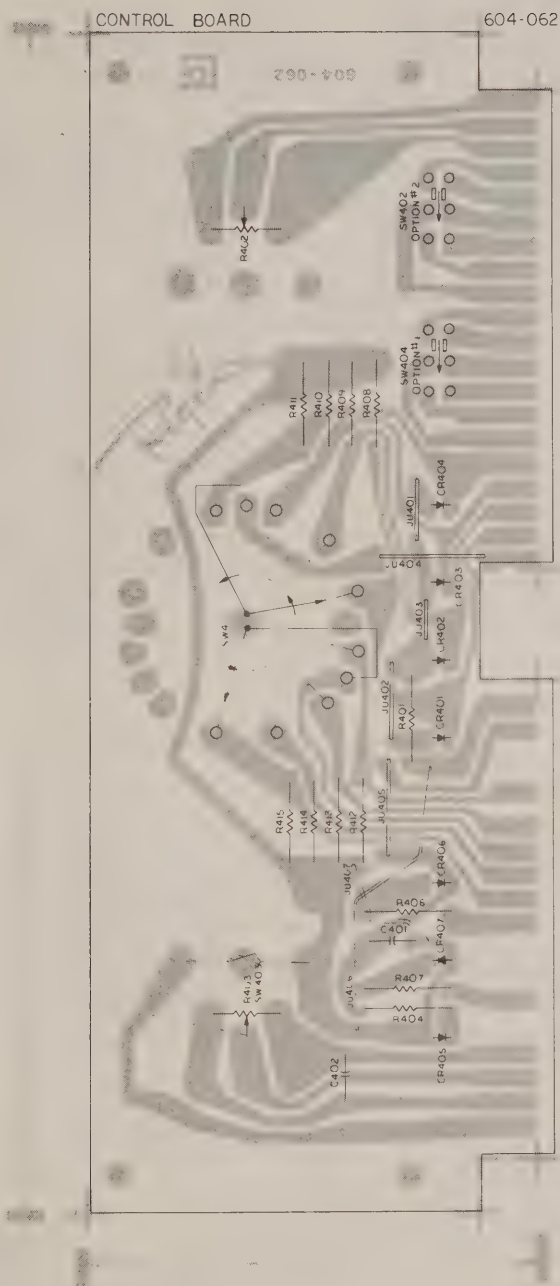
COILS

L201A	coil variable	1800-3191-406	
L201B	coil variable	1800-3191-406	(4ch only)
L201C	coil variable	1800-3191-406	(4ch only)
L201D	coil variable	1800-3191-406	(4ch only)
L202A	choke 5.6 uhy	1802-0569-008	(4ch only)
L202B	choke 5.6 uhy	1802-0569-008	(4ch only)
L202C	choke 5.6 uhy	1802-0569-008	(4ch only)
L202D	choke 5.6 uhy	1802-0569-008	(4ch only)
L203	choke 5.6 uhy	1802-0569-008	(4ch only)
L204	coil variable	1800-5100-521	
L205	coil variable	1800-5129-101	
L206	coil variable	1800-5129-102	
L207	choke .47 uhy	1802-0478-008	
L208	choke 22 uhy	1802-0220-008	
L209	choke 15 uhy	1802-0150-004	
L210	choke RF	1800-5100-522	
L211	not used		
L212	coil variable	1800-5129-103	
L213	coil variable	1800-5129-102	
L214	coil variable	1800-5100-523	
L215	coil variable	1800-5129-104	
L216	coil variable	1800-5129-102	
L217	not used		
L218	10.7 IF shielded	1800-3248-001	
L219	10.7 IF shielded	2800-3248-001	
L220	coil quad det	1800-3218-800	
L221	choke 1000 uhy	1800-3409-201	
L222	ferrite bead	2502-0000-001	

<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>	
L223	ferrite bead	2502-0000-001	
L224	ferrite bead	2502-0000-001	
L225	ferrite bead	2502-0000-001	
L226	ferrite bead	2502-0000-001	
L227	ferrite bead	2502-0000-001	
L228	ferrite bead	2502-0000-001	
L229	ferrite bead	2502-0000-001	
DIODES			
CR201A	varicap	4809-5420-600	
CR201B	varicap	4809-5420-600	(4ch only)
CR201C	varicap	4809-5420-600	(4ch only)
CR201D	varicap	4809-5420-600	(4ch only)
CR202A	diode sil IN4148	4805-1241-200	(4ch only)
CR202B	diode sil IN4148	4805-1241-200	(4ch only)
CR202C	diode sil IN4148	4805-1241-200	(4ch only)
CR202D	diode sil IN4148	4805-1241-200	(4ch only)
CR203	diode sil IN4148	4805-1241-200	
CR204	diode sil IN4148	4805-1241-200	
CR205	diode sil IN4148	4805-1241-200	
CR206	diode sil IN4148	4805-1241-200	
CR207	diode sil IN4148	4805-1241-200	
TRANSISTORS			
Q201	Trans Blue Top SPS1476	4801-0000-003	
Q202	Trans Blue Top SPS1476	4801-0000-003	
Q203	FET U310	4811-3406-200	
Q204	SPS-952-2	4801-0000-016	
Q205	Trans BLue Top SPS1476	4801-0000-003	
Q206	Junct FET 2N5668	4811-0000-030	
Q207	Trans Blue Top SPS1476	4801-0000-003	
INTEGRATED CIRCUITS			
IC201	IF sub system	3130-6056-500	
IC202	TD A2002 AV	3130-5407-602	
IC203	LM358N	3130-3169-909	
MISCELLANEOUS			
CF201	filter ceramic	2700-3209-500	
XF201	xtal filter 2P 10.7MHz	2705-3232-200	
XF202	xtal filter	2705-1306-600	
XF203	xtal filter 2P 10.7MHz	2705-3232-200	

MAIN BOARD 704-064 (PARTS VARIABLE 30IIH)

C204	20PF 10% 50V NPO(DISC)	1500-0200-650
L205	coil variable	1800-5129-105
L206	coil variable	1800-5129-106
L212	coil variable	1800-5129-107
L213	coil variable	1800-5129-106
L215	coil variable	1800-5129-108
L216	coil variable	1800-5129-109
C345	3.3PF 10% 50V NPO(DISC)	1500-0339-905
C346	.56PF 10%(MUD)	1510-0568-900
C347	8.2PF 10% 500V NPO(DISC)	1500-0829-905



NOTES:
THE FOLLOWING PARTS ARE USED ON 4 CHANNEL MODELS ONLY
1 SW401, SW402, SW403, SW404, SW405, SW406, SW407, SW408, SW409, SW410, SW411, SW412, SW413, SW414, SW415, SW416, SW417, SW418, SW419, SW420, SW421, SW422, SW423, SW424, SW425, SW426, SW427, SW428, SW429, SW430, SW431, SW432, SW433, SW434, SW435, SW436, SW437, SW438, SW439, SW440, SW441, SW442, SW443, SW444, SW445, SW446, SW447, SW448, SW449, SW450, SW451, SW452, SW453, SW454, SW455, SW456, SW457, SW458, SW459, SW460, SW461, SW462, SW463, SW464, SW465, SW466, SW467, SW468, SW469, SW470, SW471, SW472, SW473, SW474, SW475, SW476, SW477, SW478, SW479, SW480, SW481, SW482, SW483, SW484, SW485, SW486, SW487, SW488, SW489, SW490, SW491, SW492, SW493, SW494, SW495, SW496, SW497, SW498, SW499, SW500
2 J401, J402, J403, J404, J405, J406, J407, J408, J409, J410, J411, J412, J413, J414, J415, J416, J417, J418, J419, J420, J421, J422, J423, J424, J425, J426, J427, J428, J429, J430, J431, J432, J433, J434, J435, J436, J437, J438, J439, J440, J441, J442, J443, J444, J445, J446, J447, J448, J449, J450, J451, J452, J453, J454, J455, J456, J457, J458, J459, J460, J461, J462, J463, J464, J465, J466, J467, J468, J469, J470, J471, J472, J473, J474, J475, J476, J477, J478, J479, J480, J481, J482, J483, J484, J485, J486, J487, J488, J489, J490, J491, J492, J493, J494, J495, J496, J497, J498, J499, J500
JANUARY 1978

PARTS OVERLAY, CONTROL BOARD

CONTROL BOARD

RESISTORS (All Resistors are $\pm 10\%$, $\frac{1}{4}W$, unless otherwise noted.)

<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>	
R401	470	4701-0471-042	4 channel only
R402	variable, 7.5K	4750-3406-402	
R403/ SW403	variable 5K/switch	4750-3406-401	
R404	470	4701-0471-042	
R405	Not Used		
R406	470	4701-0471-042	
R407	470	4701-0471-042	
R408	10K	4701-0103-042	4 channel only
R409	10K	4701-0103-042	4 channel only
R410	10K	4701-0103-042	4 channel only
R411	10K	4701-0103-042	4 channel only
R412	10K	4701-0103-042	4 channel only
R413	10K	4701-0103-042	4 channel only
R414	10K	4701-0103-042	4 channel only
R415	10K	4701-0103-042	4 channel only

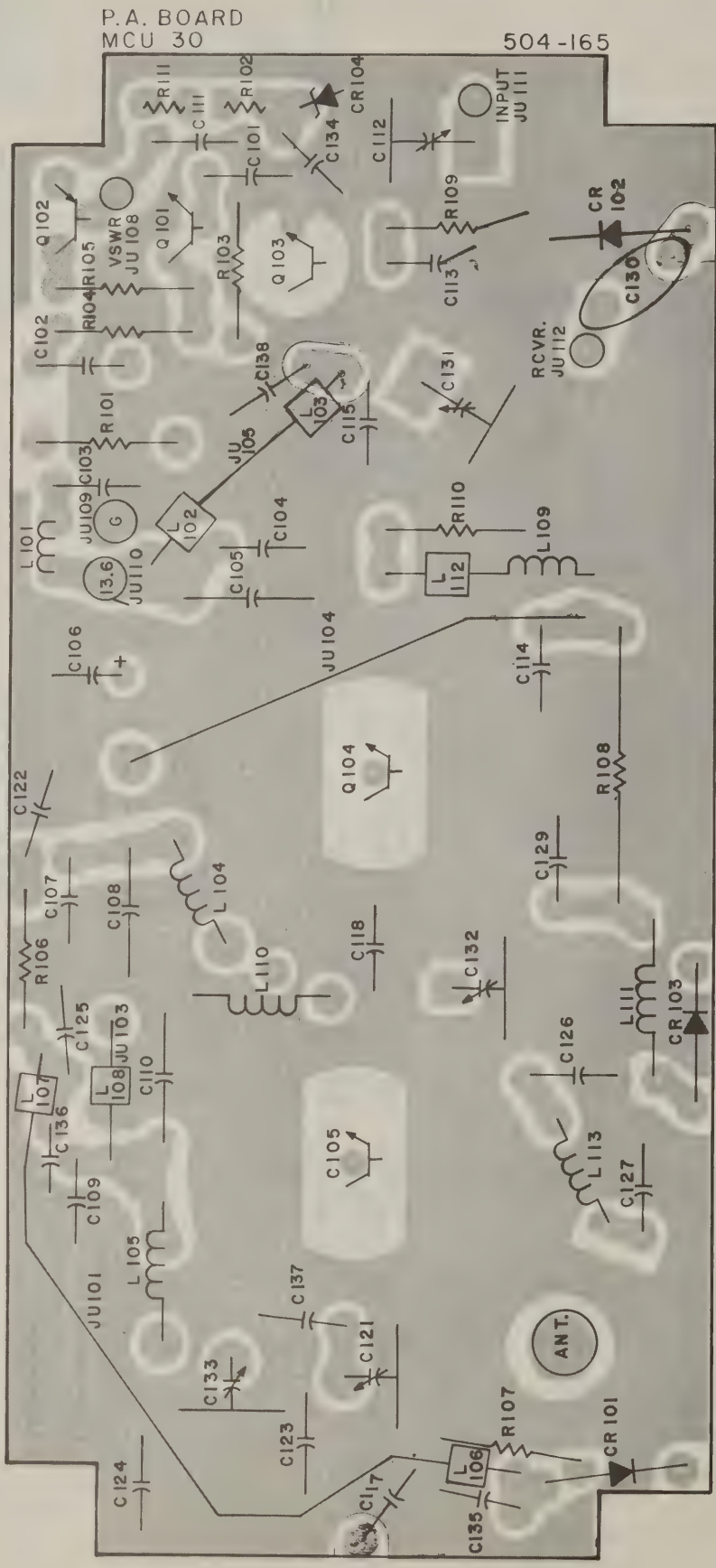
DIODES

CR401	LED, RED FLV-110	4810-0000-001	4 channel only
CR402	LED, RED FLV-110	4810-0000-001	4 channel only
CR403	LED, RED FLV-110	4810-0000-001	4 channel only
CR404	LED, RED FLV-110	4810-0000-001	4 channel only
CR405	LED, RED FLV-110	4810-0000-001	4 channel only
CR406	LED, RED FLV-110	4810-0000-001	4 channel only
CR407	LED, RED FLV-110	4810-0000-001	4 channel only

SWITCHES

SW401	rotary	5111-5411-001	4 channel only
SW402	slide	5111-5136-001	
SW403/ R403	switch/variable 5K	4750-3406-001	
S404	slide	5111-5136-001	

REVISIONS		
ZONE	REV	DESCRIPTION
	A	RELEASE R-048
		DATE 7-7-78
		APPROVED [Signature]



COMMUNICATIONS INC.		DATE 4/1/78	
SATELLITE BEACH, FLORIDA 32937		CHECKED [Signature]	
PARTS OVERLAY, MCU-30 P.A.		ENG'G [Signature]	
SIZE C		SCALE 4/1	
PART NUMBER 504-178		SHEET 1 OF 1	
DO NOT SCALE DWG.		NEXT ASSY APPLICATION	
USED ON MCU-30 P.A.		FINISH	

REVISIONS		
ZONE	REV	DESCRIPTION
	A	RELEASE R-048
		DATE 9-7-78
		APPROVED [Signature]

P.A. BOARD		
MCU 30		
504-163		

UNLESS OTHERWISE SPECIFIED		
DIMENSIONS ARE IN INCHES		
TOLERANCES ARE:		
±	FRACT	DEC
±	XXI	ANGLE
±	XXXI	±
MATERIAL		
FINISH		
DO NOT SCALE DIMS.		

APPROVALS		
DATE	6/1/78	
DRAWN	DRB	
CHECKED	NCB	
QTS SUPV	WJ	
ENGR	WJ	

COMMUNICATIONS INC.		
SATELLITE BEACH, FLORIDA 32937		
PARTS PLACEMENT, MCU 30 - PA.		
SIZE	C	
PART NUMBER	504-177	
REV	A	
SHEET	4/1	OF 1

APPLICATION		
NEXT ASSY	MCU-30 P.A.	
USED ON		



PARTS LIST

MICROCOM U30

POWER AMPLIFIERRESISTORS (All Resistors are $\pm 10\%$, $\frac{1}{4}W$, unless otherwise noted)

<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
R101	6.8K	4700-0682-042
R102	15K	4701-0153-042
R103	10K	4701-0103-042
R104	10K	4700-0103-042
R105	1.8K	4701-0182-042
R106	4.7K	4700-0472-042
R107	47 Ohm	4700-0470-042
R108	180 Ohm 1W	4701-0181-045
R109	100 Ohm	4700-0101-042
R110	100 Ohm	4700-0101-042
R111	470 Ohm	4700-0471-042

CAPACITORS

C101	47PF 50V 5%	1524-0470-002
C102	.005MF 50V +8-2% (DISC)	1503-0502-005
C103	.01MF 50V +8-2% (DISC)	1503-0103-007
C104	100PF 500V 5% (MICA)	1504-0101-505
C105	.01MF 500V +8-2% (DISC)	1503-0103-008
C106	100MF 16V 85D (ELEC)	1513-0101-002
C107	100PF 500V 5% (MICA)	1504-0101-505
C108	.01MF 500V +8-2% (DISC)	1503-0103-008
C109	100PF 500V 5% (MICA)	1504-0101-505
C110	.01MF 500V +8-2% (DISC)	1503-0103-008
C111	.01MF 50V +8-2% (DISC)	1503-0103-007
C112	2.5-20PF (TRIM)	1517-0000-034
C113	6.8PF 500V 10% (DISC)	1500-0689-905
C114	.001MF 50V +8-2% (DISC)	1503-0102-003
C115	100PF (MICA)	1522-0101-007
C116	50PF (MICA)	1522-5418-301
C117	5.6PF 5% (DISC)	1501-0569-023
C118	82PF (MICA)	1522-0820-007
C119	50PF (MICA)	1522-5418-301
C120	50PF (MICA)	1522-5418-301
C121	2-18PF (TRIM)	1517-0000-041 (U31H,U34H only)
C122	.01MF 50V +8-2% (DISC)	1503-0103-007
C123	10PF (MICA)	1522-0100-006
C124	100PF (MICA)	1522-0101-007
C125	.001MF 50V +8-2% (DISC)	1503-0102-003
C126	6.8PF 500V 10% (DISC)	1500-0689-905
C127	6.8PF 500V 10% (DISC)	1500-0689-905
C128	20PF (MICA)	1522-0200-006
C129	.001MF 50V +8-2% (DISC)	1503-0102-003
C130	220PF 50V 5% (MICA)	1506-0221-550

<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
C131	2.5-20PF (TRIM)	1517-0000-034 (U31H,U34H only)
C132	2-18PF (TRIM)	1517-0000-041
C133	2-18PF (TRIM)	1517-0000-041
C134	.001MF 50V +8-2% (DISC)	1503-0102-003
C135	47PF 50V 5% (DISC)	1524-0470-002
C136	47PF 50V 5% (DISC)	1524-0470-002
C137	.01PF 100V +8-2% (DISC)	1501-0103-009
C138	8.2PF 500V 10% (DISC)	1500-0829-905

DIODES

CR101	IN4148 (selected	4805-1241-200
CR102	Pin, UM9484	4815-3408-600
CR103	Pin, UM9484	4815-3408-600
CR104	Zener, 5.1V 5%	4808-0000-031

COILS

L101	Bead, choke	2502-3254-101
L102	Bead, choke	2502-0000-001
L103	Bead, choke	2502-0000-001
L104	RF choke	1803-5125-904
L105	Choke, .15 uhy	1803-3269-000
L106	Bead, choke	2502-0000-001
L107	Bead, choke	2502-0000-001
L108	Bead, choke	2502-0000-001
L109	Choke, .1 uhy	1802-0108-008
L110	Choke, .1 uhy	1802-0108-008
L111	RF choke 1 uhy	1802-0010-009
L112	Bead, choke	2502-0000-001
L113	Choke, LM-2	1803-5125-907

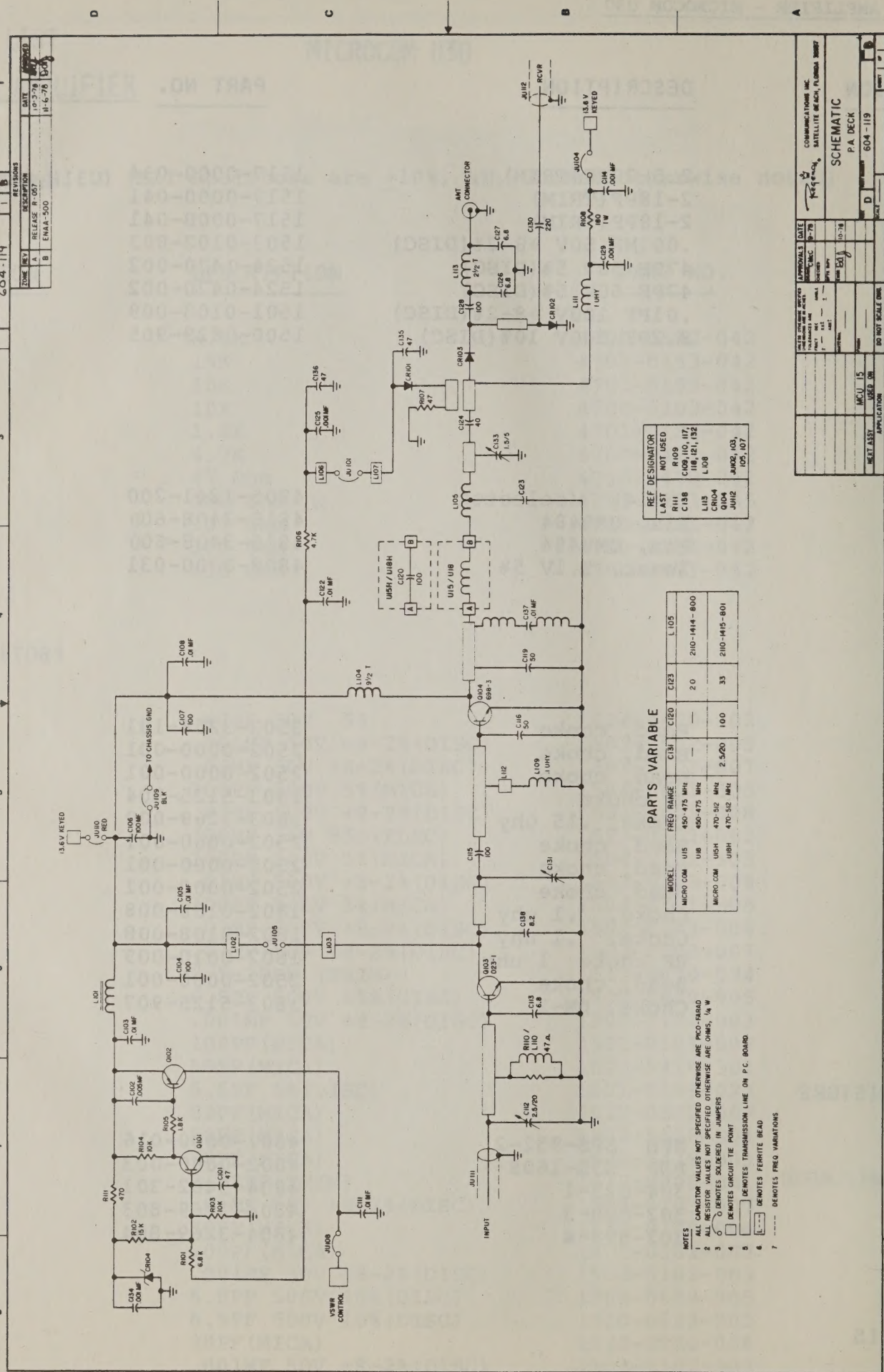
TRANSISTORS

Q101	NPN SPS-952-2	4801-0000-016
Q102	PNP SJE-1608	4802-0000-003
Q103	304-023-1	4804-3402-301
Q104	302-690-3	4804-3269-803
Q105	302-698-4	4804-3269-804

CHASSIS

C1	.001 20V (FT)	1521-0102-001
C2	.001 20V	1521-0102-001

ZONE	REV	DESCRIPTION	DATE
A	1	RELEASE R-027	10-3-78
B	2	ENAA-500	11-6-78



REF DESIGNATOR	
LAST	NOT USED
R109	
R110	
C158	
C159	
L108	
L109	
J102	
J103	
J104	
J105	
J106	
J107	

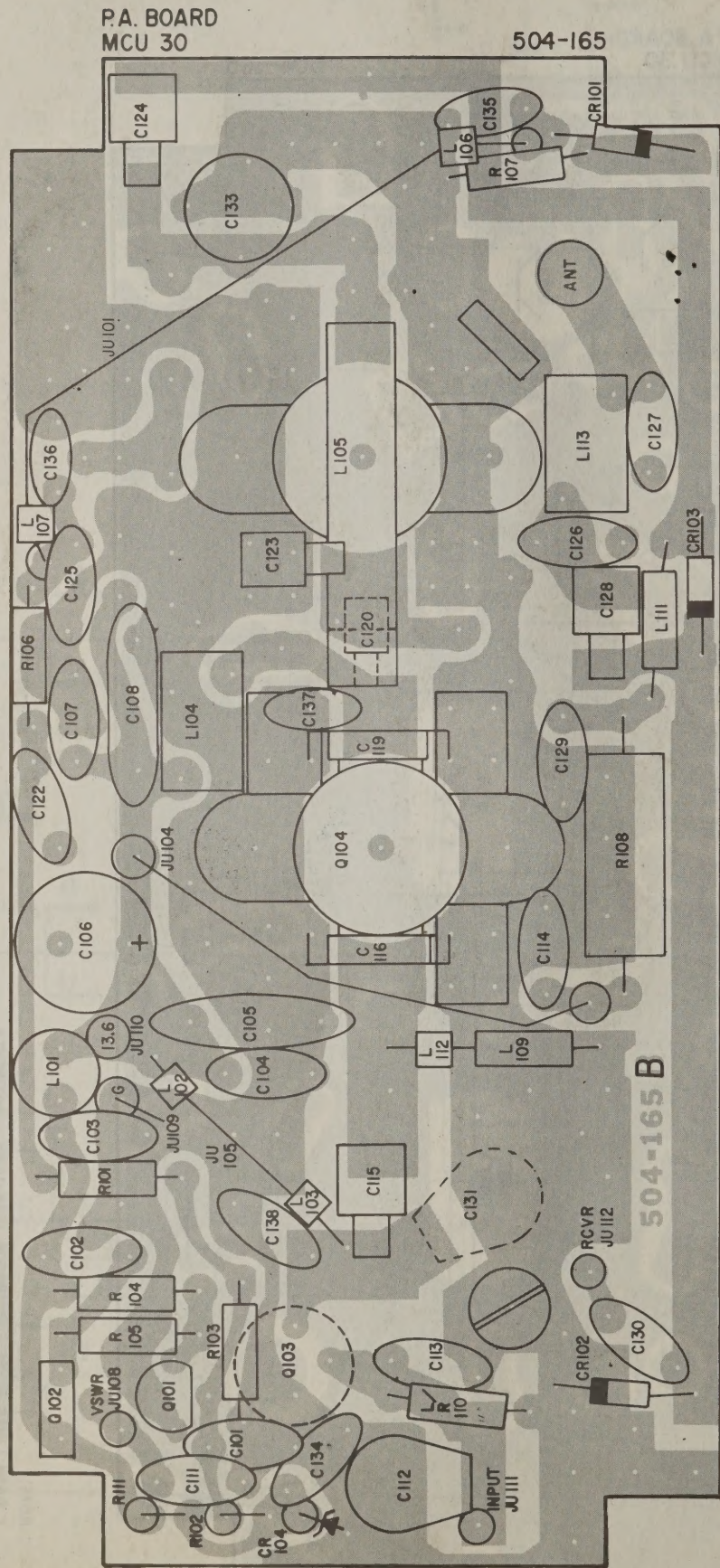
MODEL	FREQ RANGE	C131	C132	C133	L105
MICRO COM	450-475 MHz	—	2.0	210-1414-800	
UB	450-475 MHz	—	—	—	—
MICRO COM	470-512 MHz	2.5/20	100	33	210-1415-801
UBH	470-512 MHz	—	—	—	—

- NOTES
- 1 ALL CAPACITOR VALUES NOT SPECIFIED OTHERWISE ARE PICO-FARAD
 - 2 ALL RESISTOR VALUES NOT SPECIFIED OTHERWISE ARE OHMS, 1/4 W
 - 3 0 DENOTES SOLDERED IN JUMPER
 - 4 DENOTES CIRCUIT TIE POINT
 - 5 DENOTES TRANSMISSION LINE ON P.C. BOARD
 - 6 DENOTES FERRITE BEAD
 - 7 DENOTES FREQ VARIATIONS

DATE	REVISIONS
10-3-78	1
11-6-78	2

COMMUNICATIONS INC.	DATE	10-3-78
SATELLITE DECK, FLORIDA 32077	REV	2
SCHEMATIC		
P.A. DECK		
604-119		
D		
1		

000-000000



NOTE:
1. DASHED COMPONENTS REPRESENT UNIQUE U15H / U18H PARTS PLACEMENT.

[illegible]